TECHNOLOGY DEPT.

It's Important to Know In Time'

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The Newspaper of the Industry

Air Conditioning & REFRIGERATION NEWS

Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Technical Governmental

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Prices Set For Systems Sold by Users To Gov't

Manufacturers Also Get Rates on Reconditioning Stores Cooling Systems

WASHINGTON, D. C.—Owners of large-scale refrigeration and air-conditioning equipment who sell this machinery for use by war industries will be paid the total cost, less depreciation, but including the full cost of original installation, the Office of Price Administration announced Nov. 22. Manufacturers who recondition such equipment will also be reimbursed in full.

The WPB is urging department stores, hotels, office buildings and other enterprises to sell such equipment, since new production cannot meet all the needs of war industries.

Since the sellers of this equipment would be patriotically sacrificing its use for the duration of the war, OPA ruled that they should be fully reimbursed.

The Nov. 22 action, contained in Amendment No. 55 to Maximum Price Regulation No. 136 (Machines and Parts and Machinery Services), provides that the maximum price for these sales shall be the installation costs of the equipment to the user plus the original cost less depreciation at the rate of 5% per year. This is the generally accepted depreciation rate recognized by the United States Treasury in its purchases.

The conversion program calls for the purchase of this machinery by its manufacturers, who will then recondition it for the use of the plant to which WPB has allocated it. The OPA action, which becomes effective Nov. 27, 1942, permits the manufacturer to recover his total expenses, including inspection, dismantling, rebuilding and reconditioning, shipping and installation costs. In addition the manufacturers may add any out-of-pocket expenses incurred in such transactions plus a reasonable charge for engineering and risk and responsibility.

Manufacturers' charges for risk and responsibility and for engineering will be reviewed by OPA, as all manufacturers are required to submit a report of the transaction and the amount of profit to OPA. Unless OPA disapproves the transaction within 30 days, the price at which it is sold by the manufacturer will be considered to be automatically approved.

Any questions about the terms of this order should make reference to Amendment No. 55 to Price Regulation 136.

Dealers Can Sell Vacuum Cleaners

NEW YORK CITY—Sale of new vacuum cleaners to the public became legal again on Nov. 21.

The WPB authorized all retailers and wholesalers to sell to the public any vacuum cleaners they have on hand. Such sales had been forbidden since Oct. 24.

Vacuum cleaners held by manufacturers, their affiliates, and "private brand sellers" who have 500 or more cleaners remain frozen pending determination of how many of these machines are needed by the armed forces.

Studies show that the military do not need the machines held by retailers and wholesalers, it was explained. Officials said that some of the manufacturers' stock may also be opened for public sale later on.

No estimate was available on the number of cleaners that the order releases.

Why This Issue May Reach You A Little Late

Normally each issue of the News goes to press on Friday. This issue was not put to press until Monday in order to permit coverage of the General Refrigeration Industry Conference held Nov. 19 and 20 in Chicago.

The report of this meeting should be interesting and valuable to the reader in strengthening his convictions about the essentiality of refrigeration equipment, and in giving him a precise picture of the present availability of the various types of repair parts. In addition to the general story starting on this page, there is Dr. Morris Fishbein's inspiring address on refrigeration's essentiality from the health standpoint (pages 8 and 9), the comprehensive analysis by Alex Holcombe, Jr. of the parts situation (pages 16 and 17), and K. M. Newcum's discussion of priorities (pages 12 and 13).

Reports of the meeting of the Refrigeration Equipment Manufacturers Association and the National Refrigeration Supply Jobbers Association will be published in a later issue.

Friedrich Co., Cabinet Maker, Employs Girls On Its Plant Lines

SAN ANTONIO, Texas.—In one of the most important changes in company history Ed Friedrich, Inc., commercial refrigerator manufacturing company here has turned over almost the entire job of producing urgently-needed walk-in and reach-in refrigerators for the U. S. Army to a crew of 70 former housewives.

The all-woman staff was added in early September when ordinary employe procurement methods failed to produce the needed men, either experienced or inexperienced. All, according to A. R. Kinley, personnel manager for the Friedrich firm, are totally inexperienced former housewives, except for a small percentage chosen for special training from San Antonio WPA rolls.

Girl employes are winding armatures, installing motors, compressors,

(Concluded on Page 2, Column 5)

Service Firms Told To Seek Deferment For Essential Men

DETROIT — Refrigeration Contractors Association of Detroit has received notice from the local Selective Service Headquarters that all refrigeration contractors should file form 42A for all of their present employes who are doing necessary and essential work, and for whom the employer will ask for deferment from Selective Service.

"The Draft Boards are now reclassifying all registrants and many of the 3A men will be placed in class 1A for immediate induction," declared Raymond M. Shock, executive secretary of the association, who is also a member of a Detroit Selective Service Board.

"If your form 42A is not filed immediately for all your necessary and key men, it will be too late to do so when notice for induction is sent," he warned.

Retailers of Frozen Foods Seek Release Of New Equipment

CHICAGO—Frosted Food Retailers of America, following a successful one-week campaign in October to stimulate domestic consumption of frozen foods, have announced that an effort is being made to secure the cooperation of the WPB in releasing for immediate use low temperature retailing equipment already manufactured but "frozen" in the hands of manufacturers and distributors, as a means of further carrying out the government's expressed wish that frozen foods be made available to more consumers.

Such a move, the association believes, will help fill the gaps caused by shortages of various other types of processed foods, especially canned goods.

Consumer sales of quick-frozen foods for October ran about 30% ahead of the same month a year ago, according to J. L. Harrison, secretary of Frosted Food Retailers of America under whose auspices the

(Concluded on Page 2, Column 1)

Industry Concentration Will Be Tried Only If War Effort Gains, Burns Says

NEW YORK CITY—In a discussion of the War Production Board's industry concentration plans, Arthur B. Burns, chief economic adviser of the Office of Civilian Supply, WPB, told members of the Association of National Advertisers at a meeting here that concentration would be undertaken only upon proof of gain to the war program.

"If there is a gain justifying the disturbance of business," Mr. Burns explained, "business will be required to make the changes necessary to assist the war program. The sole business of the WPB is war production. It will call for all reasonable sacrifice for the sake of war production, but no more."

During the past summer Mr. Burns was in England studying the British system of industry concentration. He reports that British experience has shown that the government must make the decisions as to which firms shall continue production and which shall "commit at least temporary suicide;" that such decisions would be impossible for the business concerns affected to make.

The British have made every effort to keep the distribution end of the closed businesses active, and also to keep the brands and trade names alive, he said, although not if such protection would require the excessive use of transportation, scarce materials, or labor. He went on to say that in England "wherever possible they permit the goods supplied to a firm with a closed plant to carry the name of that firm.

"Even where virtually only utility goods may be made, as in the shoe industry, the goods supplied to closed plants carry not only the government utility mark, but also the name of the closed firm or its brand."

In outlining the principles which the War Production Board will follow in establishing the concentration program, Mr. Burns said that concentration is possible only where the output of a product must be cut to a level well below the capacity of the industry, and it is necessary "only when it will release to the war program needed resources, such as materials, plant facilities, labor, electric power, or transportation, or when permitted production is so far below capacity that plants are unable to continue in production without concentration."

So many plants should not be closed that the remaining ones would have to work at 100% capacity to supply the market, he said, and added that a cushion of 15 to 20% of unused capacity should be provided.

Industry Marshals Forces, Facts To Present the Repair Parts Situation To Gov't Agencies

2-Day Chicago Session Points Toward a Plan For Presenting Story In a Unified Manner

CHICAGO—The refrigeration field made one of its strongest moves to date to prove its point that more consideration must be given to its manpower and material needs if it is to keep essential existing equipment in repair for the duration, at the General Industry Conference at the Palmer House here Nov. 19-20.

Specifically, the industry developed three new points of attack at the meeting:

(1) Took some of the steps that are necessary before the mechanical refrigeration industry can present a "united front" to the Washington agencies. There is much work yet to be done, but at least a start has been made.

(2) Set up the machinery to obtain—by product groups—estimates of just how much critical materials will be needed to keep the industry's repair and maintenance facilities for essential installations in operation during the coming year.

(3) Received assurances from Dr. Morris Fishbein, famed editor of the "Journal of the American Medical Association," that mechanical refrigeration is vitally essential to America's health and security, and a pledge of the support of organized medicine — on whose part some moves have already been made — that representations will be made to government agencies that the maintenance of refrigeration is vitally important to this country's health and welfare.

But representative of the problem that the refrigeration industry faces was a letter read by Dr. Fishbein, and written by Robert C. Fischelis, chief, Medical and Health Supplies Section, Consumers Programs Branch, Office of Civilian Supply, supposedly "assuring" Dr. Fishbein that repair parts for mechanical refrigeration systems are readily available, and that civilian users are facing no problems in getting their refrigeration systems serviced.

Those attending the conference hooted at the smug tone of the letter (published in full on page 9), and the ignorance it displayed of actual conditions facing the industry. The letter merely strengthened their conviction that more than ever action is needed to convince official Washington of the industry's importance and problems.

John Wyllie, Jr., general manager of Temprite Products Corp. and president of the Refrigeration Equipment Manufacturers Association, pointed up one of the most salient features in the whole refrigeration question when, in introducing Dr. Fishbein, he declared:

"America's health and efficiency are geared to modern refrigeration methods.

"Some people in other lands and with less-advanced standards of civi-

(Continued on Page 20, Column 1)

Boeschenstein Will Be CMP Director; Skuce Is Assistant

WASHINGTON, D. C. — Harold Boeschenstein, president and general manager of Owens-Corning Fiberglas Corp., Toledo, will be director of the new Controlled Materials Plan Division of WPB, J. A. Krug, deputy director general for distribution, announces.

Assistant director is W. C. Skuce, supervisor of materials procurement, priorities, and inventory control for General Electric Co., Schenectady, N. Y.

In distributing materials under the CMP, Mr. Boeschenstein and Mr. Skuce will work in close cooperation with directors of the three controlled materials divisions—steel, aluminum, copper—who are Hiland G. Batcheller, Arthur H. Bunker, and Harry O. King, respectively.

The Controlled Materials Plan Division, which will operate under Mr. Krug's general direction, includes the offices of the director and assistant director, a Controlled Materials Board, and an Engineering Board of Review. Also established within the division are a Scheduling Methods Branch, an Instruction, Inquiry and Service Branch, and an Operations Branch.

The division will be the agency charged with development and administration of the operating policies to govern CMP.

The Controlled Materials Board will

(Concluded on Page 2, Column 2)

300,000 Ice Boxes To Be Built in '43; Iron & Steel Limited to 6 Lbs.

WASHINGTON, D. C.—The War Production Board has authorized for next year, production of 300,000 iceboxes containing but six pounds of iron and steel each.

Moreover, WPB is permitting manufacture of 107,300 iceboxes from now until Dec. 31 by 13 manufacturers currently producing them. Use of iron and steel for the remainder of the year will be limited to 15 pounds for each box.

The new order contains no provisions for manufacture of mechanical refrigerators.

Sales of Idle Stocks Must Be Reported

WASHINGTON, D. C.—Owners of idle stocks of copper and steel, and their alloys, who sell directly to authorized war producers, as permitted by Priorities Regulation No. 13, are now required to report such sales by a recent amendment to that regulation.

When a sale is made of copper from inventories previously reported to the WPB, care Copper Recovery Corp., 200 Madison Ave., New York City, the seller must now send a copy of the invoice to that address.

Sellers of steel from reported inventories should address their invoice copies to WPB, care Steel Recovery Corp., 5835 Baum Blvd., Pittsburgh.

Frozen Food Group To Push Expansion Drive

(Concluded from Page 1, Column 3)

industry conducted a National Frosted Foods Week.

In announcing the results of the drive, based on reports received from distributors in every section of the country, Mr. Harrison credited the success of the promotion to the cooperation of producers and distributors, and the supporting efforts of newspapers, food trade periodicals, national magazines and radio stations. Saying that the aims expressed some months ago by the Department of Agriculture and the War Production Board, when these Federal agencies asked the industry to increase its wartime role in the domestic food supply situation, had been realized, Mr. Harrison asserted that producers, distributors, and retailers will continue to cooperate with the government to "assure adequate supplies of farm-fresh fruits, vegetables and other foods to the civilian population."

Divulging the information that Washington is now surveying the industry's production facilities in order to assist producers to increase the 1943 pack, Mr. Harrison stated that though the government plans to earmark a considerable portion of the increased production for military needs in this country, the requirements of consumers on the home front will be taken into account in projecting future production schedules.

The food industry as a whole has observed with keen interest the growth of frozen foods from a small beginning in the days of peace to an important position in the nation's wartime food economy. At the present time upwards of 30,000 grocers stock complete lines of fruits, vegetables, fish, meats, and poultry. These items are staple, though producers have introduced frozen bread, dog food and other products of a perishable nature. Frozen baked beans were recently introduced with favorable consumer reaction, but distribution is still confined to the test stage in a few markets.

Action Taken To Set Up CMP Administration

(Concluded from Page 1, Column 4)

be composed of representatives of the Army, Navy, Maritime Commission, Lend-Lease Administration, Board of Economic Warfare, Office of Civilian Supply, Resources Division, the chiefs of the Aluminum, Copper, Steel, Program, and Facilities Divisions, and a labor representative.

An extensive campaign of public education in the operating details of the Controlled Materials Plan is being worked out jointly by the CMP Division and the Division of Information of the WPB. The plan itself will not become operative until the second quarter of 1943, but it is essential that in the meantime those war producers who will be included under it become thoroughly familiar with its requirements in order that they may draw their "bills of materials" for presentation to the several claimant agencies. It is on the basis of these bills that allotments of controlled materials will be computed.

Joins Wolverine

ROY C. YANTIS

DETROIT—Roy C. Yantis has taken the position of mechanical engineer with the Development Engineering staff of Wolverine Tube division of Calumet and Hecla Consolidated Copper Co. here Nov. 9. He was formerly with the Gibson Electric Refrigerator Corp. of Greenville, Mich.

Graduated from the Industrial Engineering college at Ohio State university, Mr. Yantis' engineering experience also includes work for the Inland and Frigidaire divisions of General Motors Corp., both at Dayton, Ohio.

Types of Repair Work Eligible For Insured Loans Are Listed By FHA

WASHINGTON, D. C.—Three types of work—remodeling to house war workers, repairs to maintain property, and installations to conserve heat and fuel—will receive insured loans from the Federal Housing Administration under the Title 1 program, according to Abner H. Ferguson, federal housing commissioner.

"Because these three types of work have an important place in the war effort, they are exempted from some of today's restrictions on materials and credit," Mr. Ferguson said. "Creating suitable housing for war workers, conserving fuel, and maintaining the nation's $80,000,000,000 property investment are the present objectives of loans made on the FHA's Title 1 plan."

Loans for such work may be obtained from FHA insured lending institutions in amounts up to $2,500. Repair loans are subject to installment credit rules of the Federal Reserve System and those under $1,500 must be repaid within 12 months. An exception has been made for essential emergency repairs to allow up to three years for payment.

Work such as painting, papering, repairs to plumbing and roofing or any similar repairs that are necessary to keep property in good working condition is permissible. Luxury repairs or improvements merely to beautify a home are not approved. Repairs also must be of a nature that does not change the structural design of a building.

FHA loans to finance conversions and installations such as conversion of oil burners to coal units, insulation, storm doors and windows and weather stripping may be obtained. Loans for these purposes have been exempted from the Federal Reserve Board's consumer credit regulations and may run for as long as three years. The owner must obtain permission from WPB before undertaking such fuel conservation measures.

Loans for the purpose of remodeling to provide additional living quarters are available in amounts up to $5,000 for as long as seven years which are to be paid off in monthly installments.

To qualify for a loan, a remodeling project must be located in an area where the housing situation for war workers is critical, and must be made with a view to providing living accommodations for war workers. Applicants for loans must certify to the bank or other private lending institutions that for 60 days after the project is completed first call for occupancy will be given to war workers.

Members of the armed forces, persons employed in plants producing war materials, or employes of agencies of the government that are engaged in war work are considered war workers.

Attics, basements, and other unfinished spaces may be converted into finished rooms or apartments and additions and alterations may be made to existing buildings. A building not used as a dwelling may be remodeled into a single or multi-family house.

WPB authorization is necessary in a remodeling project unless the total cost of the improvement is less than $200. The WPB must also give priority rating assistance where the purchase of critical materials is required.

Herman Goldberg Will Hold Xmas Party Dec. 11

CHICAGO—Despite priorities, rationing, and the taking over of Chicago hotels by our Armed Forces, the annual Christmas party staged by Herman Goldberg, Chicago manufacturers' agent, will be held again this year. The date—Dec. 11. The place—Mural room of the Morrison.

This will be the sixth annual Christmas party staged by Mr. Goldberg, and this year's party will be on the same date as the 1941 affair—which, incidentally, is the anniversary of the United States' declaration of war upon Germany and Italy.

Mr. Goldberg says that he has engaged one of the leading orchestras in the Chicago area to furnish the music for the affair, and he will also have several of the top entertainers in the vicinity on hand. Instead of merchandise prizes, War Savings stamps will be given out.

License Suspensions Given for Violation Of Regulotion 'W'

CHATTANOOGA, Tenn. — Acting for the first time upon its right to punish violators of Regulation W, the Federal Reserve Board has for one week suspended the license of eight southern furniture stores for failing to comply with installment credit regulations.

Until now, the board has only issued warnings to offenders.

Holders of the suspended license are Otis Clark, Fred Clark, and Mrs. Otis Clark, who operate six stores in this city, one in Dalton, Ga., and one in Lafayette, Ga., as "Clark Brothers Store," "Easy Furniture Co," "Ellis Furniture Co.," and "Clark Brothers Furniture Co."

From Nov. 22 to Nov. 28 these stores will be closed to business although payment of obligations including salaries and wages, and customary accounting operations and collections are to continue during that period.

"The violations," explains the board, "consisted of failure to obtain required down payments, to deliver proper statements of transactions to the customer, to schedule periodic payments in the required amounts, and to require customers to agree to pay their charge accounts before the tenth day of the second calendar month following the sale. Further, charge accounts were used as a means of evasion in selling articles on the installment plan."

The three violators have agreed to terms of the order and have given assurance that they will hereafter comply with all provisions of the regulation, the board revealed.

All stores in the Otis group come within the province of the Federal Reserve Bank of Atlanta. Each of the 12 banks does its own policing of Regulation W and reports to the Federal Reserve Board. Although it is understood that many violations—many unintentional—have occurred in various districts, usually violators are given the benefit of the doubt if they plead ignorance of the rules or immediately agree to comply with them.

Girls Prove They Can Do Cabinet Shop Work

(Concluded from Page 1, Column 2)

valves and coils successfully, handling all such important work as cutting out box frames, turning lathes in the mill shop, making metal parts and fabricating special order construction. Each has had only a few hours of training at her special job—the need for production being so great, according to Mr. Kinley, that it was necessary to train most employes directly "on the job."

"We have been more than pleased with the results," Mr. Kinley stated. "To date there have been no accidents of any sort, and the girls have been able to handle men's jobs with less trouble. Some of them work in narrow, tight spaces while installing or checking work, others do a large amount of lifting or precision work without complaint. We have asked all girls to wear coveralls which will guard against snagging in moving machinery, or slacks and shirts which have the same safety."

Special rest periods are provided on an hourly basis. Above that, any girl is invited to "take a break" whenever she begins to feel tired. For this purpose a large recreation-lunchroom has been provided, for smoking, eating, or soft beverages. Guarding against weariness in this way has been effective in preventing even minor cuts and bruises.

WPA has collaborated with the Friedrich concern in supplying employees chosen from various women's projects in the district. Girls who are selected from this source take 160 hours of training by the plant, the government paying their salaries, and are then transferred to the Friedrich payroll if the work has been satisfactory. To date all of them have proven worthwhile. All woman employes are chosen for aptitude, good physical condition, good eyesight, and the ability to adapt themselves to various jobs.

AN IMPORTANT STATEMENT FROM "WEME"

For the past several weeks, WEME has been swamped! Hundreds and hundreds of inquiries from Manufacturers, Wholesale Jobbers, Distributors, Contractors and Dealers have flooded the War Emergency Materials Exchange, giving testimony to the economy and value of the unique WEME service by which idle or excessive inventories of raw and finished materials are redistributed into more effective war production channels.

Now, with an enlarged staff, district offices, and a smoothly functioning organization in full operation, WEME is ready to assist more firms in redistributing their idle stocks, or in obtaining urgently needed materials. Here's how to put WEME to work for you:

IF YOU HAVE SURPLUS MATERIALS TO SELL:

1. **Send WEME a list of available materials, typed, double spaced, in duplicate—showing (a) Quantity, (b) Part Number, (c) Full Description, and (d) Individual Net Price of each item.**
2. **WEME will then submit an agreement for your acceptance, outlining the terms under which WEME proposes to sell your goods. Under this agreement, if accepted, you will (a) Submit to WEME periodic revisions of your lists, (b) Indicate whether goods are to be sold by WEME on an Exclusive or on a Prior Sale Basis, (c) Agree to a moderate Service Fee for such goods as are sold by WEME for your account, and (d) Submit to WEME two copies of invoices covering the sale of such goods.**

IF YOU WISH TO PURCHASE MATERIALS THROUGH WEME:

1. **Ask that your name be placed on the mailing list of WEME'S BUYING & SELLING GUIDE. This involves no obligation on your part.**
2. **After selecting items wanted from the GUIDE, write WEME for a quotation, always specifying (1) Code Number, (2) Full Description, (3) Guide or Bulletin Number, and (4) Page Number from which items were selected.**
3. **WEME will then send a quotation on available items, with instructions as to the number of purchase orders to be issued (more than one source may be needed to obtain the full quantities of items). Purchase Orders, completely extended where necessary, are then sent to WEME, with SUPPLIERS NAME OMITTED. *Orders are not to be made out to WEME.***

That's all there is to selling or buying through the WEME organization. WEME's charges for its services in bringing Buyer and Seller together are moderate, based on a percentage of the sale.

To you, as buyer or seller, there is no involved bookkeeping expense, no endless searching for other buyers or sellers, no lengthy time-and-money-consuming detail work. Determine for yourself how effective and economical the WEME service can be for your own company. Write, Wire or Phone WEME today.

WAR EMERGENCY MATERIALS EXCHANGE
900 W. Baltimore, Detroit, Mich. Madison 1080

OFFICIAL U. S. NAVY PHOTO

Food Is Vital "AMMUNITION" *to the Men Behind the Guns*

FOOD, too, is "ammunition" to our fighting men. It is as important to their stamina and morale as powder and shell. Because Uncle Sam recognizes this fact, he has the best-fed fighting force in the world. Winter or summer, rain or shine, jungle or desert, land or sea, no effort or expense is spared in supplying every United States fighting man with the best food a grateful nation can provide.

When Uncle Sam sounds "mess call," it's "taps" for Nazijaps.

Not only does Uncle Sam procure the best food in the world for his fighting nephews, he provides every possible safeguard to protect the wholesomeness of this food . . . to make sure that it reaches our men in the best condition.

In this important business of protecting our fighting men's food by refrigeration, United is privileged to take a humble part. Our job is to build many of the giant refrigeration coolers in which the meats and foodstuffs for our armed forces are stored and preserved after they reach our many fronts.

We believe we are doing our job well. We know that each day we are finding ways of doing it better. Our goal is to do it *best.*

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Keep Your Eyes on United When Victory Comes!

United postwar planning is keeping pace with United wartime production. New designs, new improvements, new selling, merchandising and advertising plans . . . . . these are only hints of what United will have ready for you when the prosperous days of peace return. Just as United is gaining strength in its all-out effort for the war, so is United gaining strength in its preparation for Victory . . . making ready to share the responsibilities of leadership in its industry. Keep your eyes on United now . . . and THEN!

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Our plant has been greatly increased in size since Pearl Harbor. Further expansion is planned. Many new time-saving machines have been added. Production has been doubled and continues night and day. These great coolers and other United-built products for war are speeding from our plant in ever-increasing tempo.

United craftsmen, whose skill and loyalty makes this progress possible, are proving by their production records that cooperation between labor and management really works at United. These men are proud of their contribution to the war effort . . . proud of the opportunity to repay with War Bond purchases and honest sweat the great debt we owe our fighting men.

★ ★ ★ ★ ★ ★ ★

This, Mister Distributor, is the answer if you have been wondering what United is doing these days. Now you know why United coolers are only available on the home front for strictly essential war needs.

Yes, it's been tough for both of us, but you and we know that it will be a lot tougher should we lose this war.

So, let's be thankful that we can help hasten the day when we can "pass the 'ammunition'" to our boys across the table instead of across the sea!

UNITED REFRIGERATOR MANUFACTURING CO.

Plant: Hudson, Wis. Sales Division: Saint Paul, Minn.

Chemicals Division, Manufacturers of Silica Gel, Milwaukee, Wis.

United

COMMERCIAL COOLERS

WALK-INS ★ REACH-INS ★ DRY-KOOL BEVERAGE COOLERS ★ DIRECT DRAWS ★ COMPRESSORS

The Priorities Quiz

(Air Conditioning & Refrigeration News, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

Prime Contract Numbers

Q. A number of my suppliers have been returning my purchase orders asking me to furnish prime contract numbers before they will accept or fill my orders. I am a manufacturer of small parts. I operate under PRP and because of the nature of my business am not able to build "to order." Consequently, I cannot furnish prime contract numbers on orders for raw material. There must be a good many other firms who operate the same way. Do you know what they are doing about this situation?

A. Most manufacturers under PRP operate in the same way you do, that is, they are producers of "shelf goods" who build for stock and ship from stock and, consequently, are unable to identify specific orders for raw material with prime contract numbers.

A flood of protests similar to yours have been sent to the WPB recently from manufacturers and as a result Ernest C. Kanzler, Director General for Operations, has officially notified metal mills and other suppliers of material that they must accept your PRP certificate serial number in the place of army and navy contract numbers formerly required. This new procedure is effective immediately and permits the suppliers of companies under PRP to accept and fill their orders without further question. The WPB is asking manufacturers, however, to furnish contract numbers wherever possible. Under this ruling, therefore, your suppliers should now accept and fill your orders where you show your PRP certificate number and they may no longer return your orders for prime contract references.

All Producers To Get CMP Information Soon

Q. We manufacture parts for a good many prime contractors and for a good many subcontractors. All of these parts require either copper or steel, or both. As we understand it, under the new Controlled Materials Plan our customers will furnish us material to make these parts starting the second quarter and that the information necessary for them to get material is due in Washington Jan. 1—less than two months away. So far, no one has approached us for any information whatsoever. We don't want to just sit around and get left out. What can we do to be sure that our requirements will be included with the figures submitted Jan. 1?

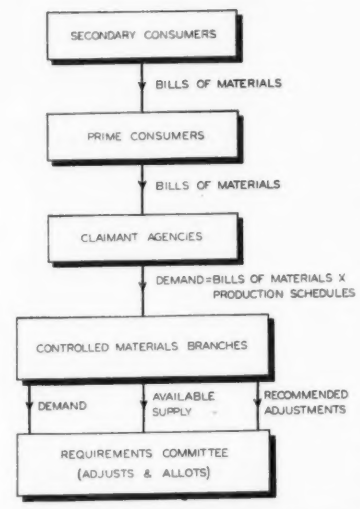
A. This same question is being asked the WPB many times every day. They are assuring everyone that they will not be left out. The CMP is still in its formative state and meetings of the WPB field men are being held now in Washington. The WPB plans to hold a series of meetings in every important industrial center in the country on or about Dec. 1 for the purpose of giving specific instructions to all types of manufacturers as to how they will fit into the program and what they must do to be assured of receiving copper, steel, or aluminum during the second quarter. Meanwhile, forms are now being printed and will be distributed as quickly as they receive final approval.

Customer Gets $483 on $113 Overcharge in OPA Price Violation

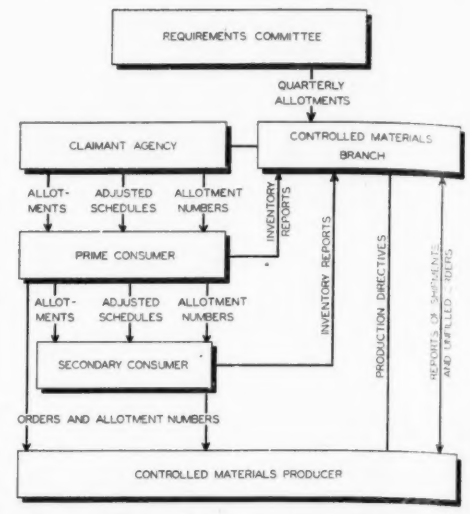
ROCHESTER, N. Y.—In the first violation of OPA price ceilings case brought to light here, appliance dealer Bejamine Levine has been forced to pay a customer a judgment of $483. Levine, who pleaded ignorance of the price ceilings covering refrigerators, sold a reconditioned box to a Rochester customer for $200 the price ceiling on the model being only $87. Monroe County Court ordered reparation of the $113 overcharge by paying the customer $483, and a court cost of $44.50.

Charts Show How CMP Works

Flow of Requirements for Demand



Flow of Allotments for Supply



The charts above show the operation methods of the Controlled Materials Plan which will be used by WPB to control the use of steel, aluminum, and copper. The flow chart on the left shows the "demand" side of the operation which enables the requirements committee to allocate the materials. The chart on the right shows how the material is distributed and recorded after the allocation has been approved. See complete description of CMP in Nov. 9 issue of News.

WPB Industry Branches Strengthened To Meet Controlled Materials Plan

WASHINGTON, D. C.—Reorganization of industry branches of the War Production Board, giving them greater strength, is being undertaken now by the office of program determination under the direction of Ferdinand Eberstadt, Vice Chairman of WPB, and Ernest Kanzler, Director General for Operations.

One of the major reasons for strengthening branches is to enable them to handle the additional burdens to be placed on them by the new Controlled Materials plan, announced recently.

To as great an extent as possible, each industry branch will follow a similar pattern. Many of the functions of the office of the Director General for Operations, not including the Bureau of Priorities Control, will be decentralized and assigned to branches, making them responsible for all operating phases such as the execution of programs, policies and procedures established for the resources assigned to branches. Branches will not, however, be responsible for policy, planning, coordination and supervision phases.

Permanent connection with industry will be maintained through active Industry Advisory Committees assigned to each branch. Claimant agencies — Army, Navy, Maritime Commission, Office of Civilian Supply, Lend-Lease, etc. — will assign permanent representatives to each branch. Permanent connection with labor also will be maintained through representatives assigned to each branch.

The pattern will apply to all material, product, facility or industry branches, although the detailed composition will depend on the individual branch.

Industry Advisory Committees assigned to the branch will endeavor to put upon industry a greater measure of responsibility for meeting war production problems. They will get advice from the industry on methods of increasing supply where shortages exist, of controlling the distribution of resources and of eliminating non-essential uses of resources. Likewise, they will obtain data on available and anticipated supply of resources and requirements for civilian use and for maintenance, repair and spare parts.

Resources, in this sense, include raw and industrial materials, processing and production capacities, facilities, tools, power and other items necessary to the production of end products, with the exception of manpower.

Representatives of governmental claimants in the industry branch will submit data on requirements for resources and advise and assist in apportioning the available supply in accordance with the determinations of the Requirements, Program Adjustment and Facilities Committees. Claimants, in addition will assist in the processing of various forms controlling the distribution of resources.

In effect, the permanently designated representatives of claimants in each branch will form and function as a sub-committee on resources and requirements under the chairmanship of the chief of the branch.

Methods by which branches will be assigned representatives of labor have not been finally determined but are being studied.

Under the present system, many of the staff functions of the branches are handled by bureaus and divisions under the Director General for Operations. To the extent that it is practicable these functions will be transferred to the branches, with the Office of the Director General supervising rather than executing the work.

War Dept. Cuts Down Army Use of Copper

NEW YORK CITY — Copper is keeping its important position in a revised list of prohibited items for construction work just issued by the War Department in connection with its $7,500,000,000 construction program.

The list of those items prohibited and which are required for the construction of barracks and buildings is considerably more drastic than the original list announced last April by the Army and Navy Munitions Board.

The use of copper and brass, among other things, has been drastically curtailed or eliminated entirely where possible by Army engineers in charge of the construction. Normally about 140,000,000 pounds of copper would be utilized in a construction program of this size and scope, but on the basis of present indications only about one-fourth that amount will suffice.

Copper screening has been eliminated in favor of zinc-coated steel. A plastic screen fabric, which is apparently superior to metal screening in tropical climates, is also under consideration. Possibly this plastic will also serve in tubing and piping, thus releasing critical metals.

Climbing From 120° Of Desert Heat To 70° Below In A Matter Of Minutes

That's "Fever and Chills" for both metal and man.

If the metal fails to function properly under these sudden extremes, so does the man. His very life is dependent upon the scores of instruments and controls in his ship.

Pilots are not asked to trust their lives to the performance of UNTRIED controls. Thanks to the development of compact, practical test-cabinets; sub-zero tests can be made before flight; testing the delicate instruments under the same temperature conditions which the pilot will experience in actual combat.

Servel is proud to say that its line of compact, single-compressor, two-stage units has been a vital factor in making such tests possible.

Scores of manufacturers throughout the country have standardized on Servel's equipment for their "Hi-low" Cabinets, Stratosphere Test Chambers, and other sub-zero applications. We invite inquiries from other manufacturers producing this type of equipment.

We will gladly refer inquiries from dealers or distributors to our present allied manufacturers.

FREE Write for this newly printed booklet which will help your salesman answer those technical questions which industrial engineers are sure to ask when he calls to sell Industrial Refrigeration. It's free to those who will write for it on company letterhead.

SERVEL, Inc.

COMMERCIAL REFRIGERATION AND AIR CONDITIONING DIVISION

EVANSVILLE INDIANA

REFRIGERATION TYPE ELECTRIC MOTORS

A Stock of New and Rebuilt Motors For Sale

WELL KNOWN MAKES SUCH AS:
General Electric Westinghouse
Delco Century

⅛, ⅙, ¼, ⅓, ½ HORSEPOWERS
115 or 230 volts 1750 R.P.M.

We advise you to take advantage of this offer, while they last. Let us know of your electric motor problems. Wire or write.

P. J. QUINN'S SONS ELECTRIC MOTOR CO.
46-15 Vernon Blvd., Long Island City, N. Y.

For Defense

CORDLEY

INDUSTRIAL

WATER COOLERS

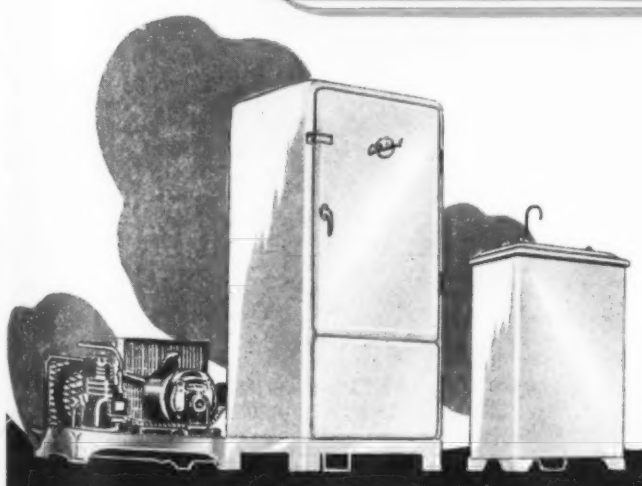
CORDLEY & HAYES
452 FOURTH AVE.
NEW YORK

Bomber Carburetors, Tanks, Anti-Aircraft Guns . . .

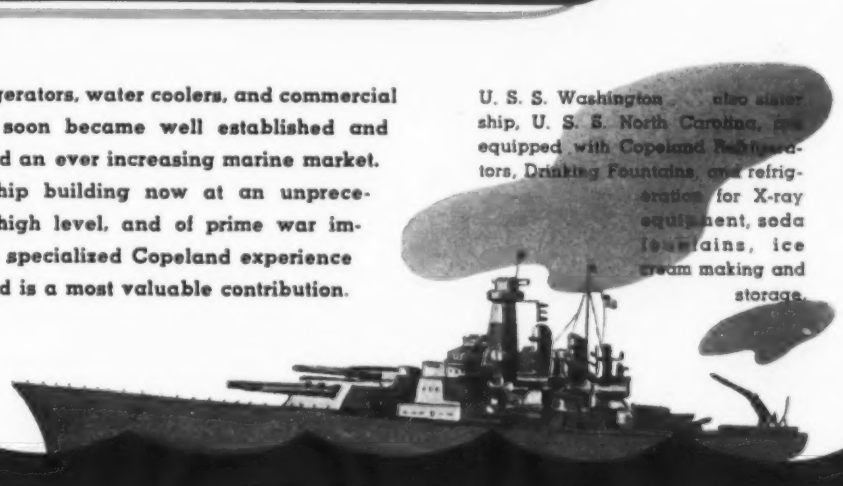
Parts for these, illustrated above, are typical of Copeland wartime production. It is work of the most exacting kind to assure the dependability and accuracy required of fighting equipment —work for which we qualified because of outstanding ability in precision manufacturing. The volume of our assignments, starting before the war, has necessitated expansion into an additional plant—doubling our former floor area. ¶ We continue to produce refrigeration for government and other essential needs, also service parts to maintain maximum usefulness of Copeland units preserving food or doing other war-winning duty. ¶ Thus, we are devoting our efforts 100% to speeding Victory.

Copeland

DEPENDABLE *Electric* REFRIGERATION



Copeland Refrigeration on Navy vessels dates back to even before the "defense period" by a good many years. In 1937 a complete Copeland ship program was started with equipment designed to meet the extremely rigid specification, inspection, and test requirements. Copeland Navy type refrigerators, water coolers, and commercial units soon became well established and enjoyed an ever increasing marine market. With ship building now at an unprecedented high level, and of prime war importance, specialized Copeland experience in this field is a most valuable contribution.



U. S. S. Washington . . . also sister ship, U. S. S. North Carolina, are equipped with Copeland Refrigerators, Drinking Fountains, and refrigeration for X-ray equipment, soda fountains, ice cream making and storage.

Copeland Refrigeration Corporation, Sidney, Ohio

New York Office, 250 East 43rd. Street International Division, 60 Wall Tower, New York, N. Y., U. S. A.

What Dealers Are Doing About Merchandise Shortages

This Dealer Decided To Do a Real Job On Service— And He Did It At a Profit

Cut in Overhead Allows Him to Do Aggressive Advertising; Has Staff of 7 Men Working

By ROBERT LATIMER

EL RENO, Okla. — How the appliance dealer can cut his overhead drastically and "merchandise service" efficiently enough to show the same profit which used to come from the sale of 70 new refrigerators, 50 ranges and 50 washing machines a year is demonstrated by the experience of Elmer Tanner, head of Tanner Electric Co., here.

When it became difficult to obtain major appliances for his modern appliance store in downtown El Reno, Tanner wasn't discouraged. Instead of attempting to add sidelines and complaining about conditions, he looked into the possibility of creating sufficient service work to make up the difference, and found that El Reno couldn't provide enough to keep the store going.

Consequently, he moved out of the store, warehoused all sales fixtures, and built a small, but complete electrical repair shop in the back yard of his own home. All equipment from the downtown shop, plus a lathe, second-hand welding apparatus and a stock of old parts went into this frame building, large enough for five men to work in comfortably.

The overhead formerly represented by salesmen's salaries, that of a porter, etc., now goes into newspaper advertising on a strict "repair service" basis. Tanner runs two one-column newspaper advertisements per week in daily newspapers, headed in each case "Tanner Electric Can Help You Conserve." The name, familiar to hundreds of past appliance customers, was well worth keeping alive, Tanner felt, consequently it is printed in heavy black letters to remind the public that Tanner Electric is still "very much in business." Advertising copy includes various suggestions for conserving washing machines, ranges, refrigerators and small appliances, and invites the customer to call the Tanner Service Man in to put home equipment in condition for the duration.

Though the new location of the company is never given, Tanner nevertheless is averaging from 15 to 20 service calls per day, which keeps five outside servicemen and two mechanics in the shop busy all day long. In addition, he is making regular electrical wiring repairs and installations on government or defense projects, and has seen repair business jump to 150% of its former volume in the space of two or three months.

Good advertising and good work in the customers' homes are responsible for the heavy volume coming in. Cutting overhead to the bone, eliminating heavy salaries, license fees, etc., has at the same time cut overhead from 24% of gross sales to approximately 8% — enough to leave about the same profit per month's operation as was possible with the former downtown store.

One thing which has helped to make every customer served recommend Tanner Electric to her friends is the triplicate bill which the company uses. The bill is copied directly from the original work order on which repair men list their itemized work, and shows exactly what was done, why, and at what cost. Time and parts are entered on the bill as well.

One copy goes to the record file, one to the serviceman, and the third to the customer.

'Sandy' Pratt Finds Technical Books Display Attracts Trade

C. F. 'Sandy' Pratt arranges a window display of technical books in the San Francisco store of California Refrigerator Co.

• • •

SAN FRANCISCO — "My competitors think I'm crazy," is the way "Sandy" Pratt, promotion minded president of the California Refrigerator Co., San Francisco jobbing firm, characterizes his latest sales promotion scheme.

Main element of "Sandy's" latest stunt is the display of timely technical books on aviation and refrigeration in his store window as a means of attracting new buyers into his store.

"In any other place but San Francisco, the idea might not work," explains Pratt, "but here, with a constant influx of new personnel, particularly from the naval and aviation branches of the armed forces, you'd be surprised at the number of new accounts the idea has brought us."

"Personnel from the Army and Navy, arriving in the city ready for embarkation, or fresh in from the Pacific area, usually do a bit of sightseeing and window shopping while they're here. The book display often brings them into the store, and then we have a chance to tell them about our stocks of refrigeration and aviation parts. Like as not, the customer, having an interest in the technical books, is either a buyer or equipment himself, or has an associate who is, and we have been able to trace a sizeable volume of business to casual visitors drawn into the store by the book display."

As a means of catching the eyes of passers-by, full color aviation advertisements appearing in current technical and national magazines are pasted to the display window above the book array. Changed frequently, these advertisements, Pratt declares, further serve to arouse interest in the unusual window arrangement.

HOTPOINT'S WARTIME ADVERTISING PROGRAM

Gets a Big Hand!

My War Bond Savings Will Buy a HOTPOINT ELECTRIC KITCHEN Like This

THE OTHER DAY at Red Cross a new light dawned when one of the girls told me how surprisingly little she paid for *her* Hotpoint Electric Kitchen. Why, the money we are saving every month by investing in War Bonds will buy that Electric Kitchen after Hotpoint finishes its war job and starts making home appliances again. And believe me, I can hardly wait . . . In my new kitchen all my work will be like play!

and It's the FIRST Thing I'll Get AFTER the War!

FOR A $6,000 HOME—The Morning Glory Kitchen (above). So inexpensive are the Hotpoint Range, Refrigerator, Electric Dishwasher, Sink and Steel Cabinets that thousands of homes costing only $6,000 enjoy them.

FOR A $4,000 HOME—The lovely Americana Kitchen (above), typical of hundreds which have been installed in low-cost defense homes throughout the nation, is equipped with the dainty, efficient Hotpoint Range, Refrigerator and handsome Hotpoint Sink and Steel Cabinets. It is a practical, attractive room designed to save the homemaker time and work.

Buy War Bonds Today—Electric Kitchens Tomorrow!

Hotpoint

ELECTRIC KITCHENS

EDISON GENERAL ELECTRIC APPLIANCE CO., INC., 5674 W. TAYLOR ST., CHICAGO, ILL.

ANOTHER HOTPOINT ADVERTISEMENT

Meeting With Huge Success

WATCH for Hotpoint's War Bond advertising in *Life, Collier's, Saturday Evening Post, American Home, Better Homes and Gardens, House Beautiful* and *Bride's Magazine.* Officials of the Treasury Department have commended Hotpoint's program for adding incentive to the purchase and holding of War Bonds.

Leading utility companies, department stores and large retailers throughout the country are sponsoring the Hotpoint War Bond theme locally. Ask your Hotpoint distributor for details. Edison General Electric Appliance Co., Inc., 5632 W. Taylor St., Chicago.

Utility Plans Series of 5 Service Schools

RALEIGH, N. C.—A series of electrical appliance service schools in each of the Carolina Power & Light Co.'s five divisions is being proposed here by executives of the utility. Final plans depend on results of a survey which company representatives are making now among electrical dealers and service men to see if reaction to the idea is favorable and if a substantial enrollment would be assured.

As now set up, the suggested classes will be in charge of a competent instructor who will present in simple form the practical side of electrical appliance repairs, with real problems studied and actual repairs made during school sessions.

Enrollment will be tuition-free, so that the only expenses involved would be living costs where students found it better to remain near the school than to commute. Meetings are to be located as conveniently as possible so that everyone interested may attend with a minimum of lost time, transportation and living expenses.

Persons eligible for the school, as outlined by the company, would include women, as well as men definitely deferred from military service, men who are beyond the draft age limit, men who would prefer to work in their own homes, and mechanically-minded men seeking a new trade.

Anyone interested in the proposal not contacted by a company representative is asked to see the local Carolina Power & Light manager or to write to S. E. Weimer here.

California Utility Has Business Advice Bureau

SAN FRANCISCO—The Northern California Electrical Bureau has set up a war-time counselor service to help members seeking advice on current business problems.

Members of the Bureau's board of directors have offered to participate in the service. They will be assigned to committees where their individual qualifications can best help solve the questions involved.

Milwaukee Dealers Tell Of Service Problems In Advertising Program

MILWAUKEE — An advertising program in the Milwaukee papers is being considered by the Wisconsin Radio, Refrigeration & Appliance Association to explain to the public why immediate repair service on electrical appliances cannot now be rendered as regularly as in the past.

Members feel that many people still think in terms of immediate, or one-day service, and that they are unaware of the shortage of both parts and service men. One effective advertisement in each of the local papers, it is believed would serve to educate the public on the present situation and relieve pressure on all service organizations in the city, as well as act as a direct contribution toward the conservation of manpower, tires. and gasoline.

Store Segregates New & Used Appliances

DENVER—The "Bargain Basement" in Le Moines store here, is the place to look for used appliances. Le Moine Bechtold, president does not believe used appliances should be mixed in with new ones, even though it is becoming increasingly difficult to obtain new merchandise.

Le Moine's basement is divided into three large rooms, one of which is a complete service shop for all types of reconditioning, operated by four men. As radios, refrigerators, washing machines, etc. are reconditioned, they move from this shop directly into the front of the basement . . . radios in one room, refrigerators and other appliances in the second.

Each appliance is accompanied with a four-part tag which gives the selling price, amount of reconditioning done step by step, the signature of the mechanic doing the work, and his personal guarantee.

The store is advertising regularly to purchase any old appliances, and has found many available from young married men who sell their furniture complete when drafted.

Denver Ordnance Plant Employs Air Conditioning to Control Processing of Tracer Metals and Storage of Chemicals

DENVER, Colo..—Air conditioning equipment has recently been installed to expedite production of vital war munitions at the Denver Ordnance Plant here.

The equipment is used to maintain exact temperature and humidity in the processing of tracer metals and specially prepared powder and also for storage of chemicals.

The industrial air conditioning system is part of the recent expansion of the thirty-million-dollar Colorado cartridge plant, which Remington Arms Co., operators, found insufficient originally to handle the vast production job which the war has brought on. Consequently, a number of new extension buildings are going up for special-purpose ordnance. Most of them will be air conditioned to maintain the exact temperatures and relative humidity under which powders and tracer materials can best be produced and handled.

The Carrier system installed in the first of these buildings consists of duplex Carrier refrigeration compressors of 60 horsepower each, air handling equipment, and ductwork, circulating outdoor air and recirculating plant atmosphere as desired.

Equipment is set up in a room in one corner of the huge plant and is coupled to pre-heating coils, a spray type humidifier, two sets of dehumidifying coils of the direct expansion type, and a bank of re-heating coils —all equipment to meet any conceivable external atmospheric or weather condition while maintaining temperature at 72° F. the year around with 40% relative humidity.

Diffuser type grilles are used to localize the cooled air over storage trays, as well as afford precision cooling for the large storage rooms.

Refrigeration, it has been found, is capable of eliminating spoilage of powder and special materials suffering from summer heat. Consequently, many of the present plant extension buildings will be equipped with this type of air conditioning.

All of the coil, humidifying, dehumidifying and heating equipment is housed neatly in a single machine room to save on plant space. The installation represents some of the most exact temperature control methods in use at any ordnance plant in the nation.

High Humidity Held By Air Conditioning In Windowless Plant

MACON, Ga.—Air conditioning has made a new and unique contribution to the textile industry by making possible the construction here of the new windowless building of Macon Textiles, Inc., a subsidiary of Uxbridge Worsted Co. The two story plant has one complete story under ground level.

The underground weave room, which is 105 feet long and 103 feet wide, was constructed to provide uniform atmospheric and lighting conditions desirable for weaving a special type of new fabric, similar to upholstery, but made blending several types of fibers. Since high humidity is necessary for smooth running of this new fabric, relative humidity is maintained at 75% in the underground weave room year around.

Conceived by H. J. Walters, treasurer and general manager of the Uxbridge Worsted Co. and developed with the assistance of J. E. Sirrine & Co., engineers, of Greenville, S. C. the plant has been constructed with the weave room completely underground so that the walls are not subjected to widely varying temperature changes from day to day and from season to season.

The ground floor contains a cotton spinning room where temperature, humidity and lighting also are scientifically controlled.

Specially designed air conditioning equipment was furnished by Carrier Corp. The mill is heated during the winter months by steam coils within the air conditioning equipment; a small gas fired boiler generates the steam.

In planning the underground weave room, the accoustical air conditioning supply outlets were designed to harmonize with the equipment and lighting fixtures. A smooth, accoustical tile ceiling results in cutting down noises to a point where it is possible for employes to carry on conversation in normal tones despite the noise of machinery.

Other departures from standard textile mill practice include concealment of supply ducts over a hung ceiling and the use of the attic space above the hung ceiling as a return air plenum.

The air conditioning system provides for a complete change of air every two minutes and forty-seven seconds.

Carrier equipment also is serving the Uxbridge Worsted Co. in its Uxbridge, Mass. plant where offices and laboratories are air conditioned and the mills are humidified.

Honeywell Booklet Gives Advice on Saving of Fuel

MINNEAPOLIS — Some simple ways to increase comfort and efficiency of home heating, discovered by Minneapolis-Honeywell Regulator Co. research, have been printed by the company for American householders in a five-by-four inch booklet entitled "Do's and Don'ts of Fuel Saving."

"Fuel savings can be effected while still maintaining comfortable, healthful temperatures, if you first make your home easier to heat and then follow time-tested rules of heat regulation," states the forward of the book.

Twenty "time-tested" rules follow. Their suggestions include cleaning furnaces, sealing heat leaks, maintaining high humidity, and checking circulation, insulation, and other elements of the heating system.

Crane Cab Cooling Hailed as Leading To Tank Cooling

LONDON, England—Successful air conditioning of cabs of cranes in steel mills in the United States is reported as a timely accomplishment by "Modern Refrigeration," the English publication, in view of current British investigations into possibilities of air conditioning tanks.

Like the tank, a crane-cab is a small dimensional space; both present similar problems.

As "Modern Refrigeration" explains:

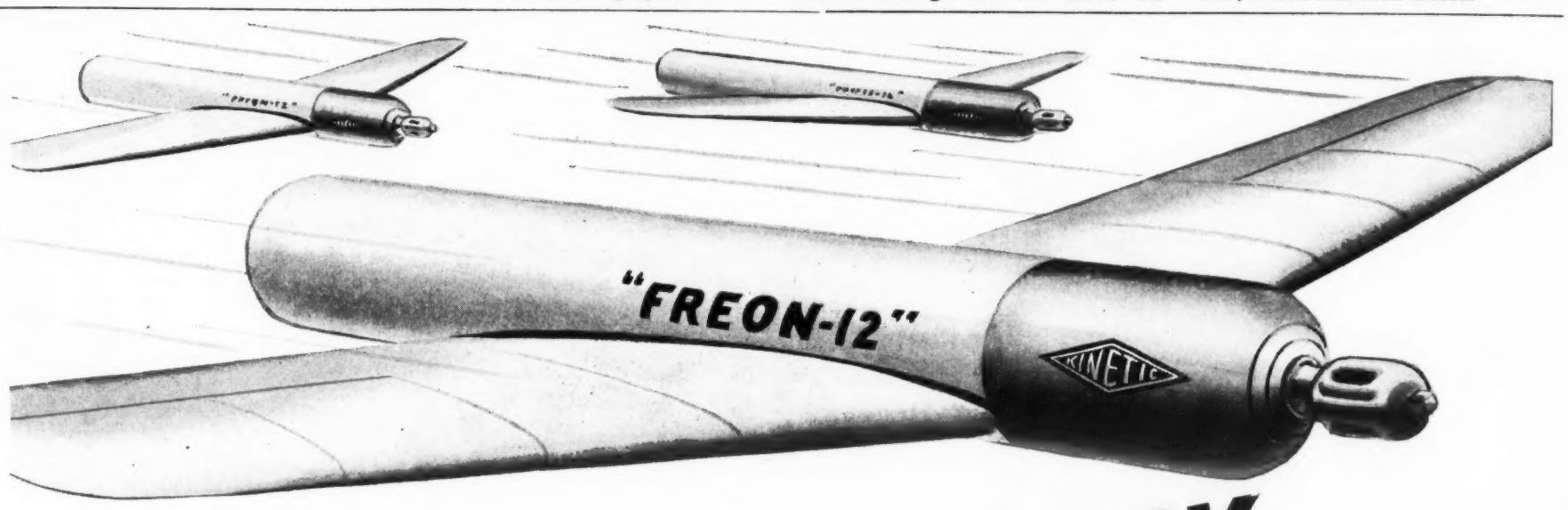
"When the air conditioning systems in these cabs, operated by the American Smelting and Refining Co., are in service, about 450 c.f.m of air passes through filters and thence through activated-carbon odor-absorbers to remove SO_2. It is next cooled by mechanical means and circulated through the cab. Since the rate of flow remains constant, a complete change of air occurs every two minutes.

"To keep out smoke, a pressure slightly above atmospheric is maintained in the cab. During the summer months, the temperature inside is 10° to 15° lower than that on the outside, and in winter the air is kept comfortably warm by an electric heater. The cab is enclosed in safety glass and is insulated with a 2½-in. thickness of rock wool.

"Among the equipment included in the conditioning system are two 20-in. by 20-in. by 2-in. air filters, two odor-absorbing units which must be reactivated every 90 days, a small air compressor driven by a 2-hp. motor, a cooling coil, a blower, and a 2,000 watt electric heater."

B. F. Sturtevant Opens Plant In La Salle, Ill.

BOSTON — B. F. Sturtevant Co. has announced the opening of a new branch plant at LaSalle, Ill., superseding the factory at Sturtevant, Wis., which has been closed.



Keep 'em flyin' . . . BACK

The Army needs "Freon" . . . and gets it.
The Navy needs "Freon" . . . and gets it.
High priority warplants need "Freon" . . . they get it.
Industry needs "Freon" . . . and gets it.

COMES A SHORTAGE OF STEEL CYLINDERS

The Army continues to get its requirements.
The Navy continues to get its requirements.
The warplants must get their requirements.
Industry gets less . . . and less . . .

THINGS SLOW DOWN

★ ★ ★ ★ ★

RIGHT NOW, KINETIC HAS THE "FREON"
. . . BUT CYLINDERS ARE SHORT

But, when the Army empties cylinders quickly,
when the Navy empties cylinders quickly,
when the warplants empty cylinders quickly,
when you empty cylinders quickly

AND WHEN ALL CYLINDERS ARE SENT BACK

Then the Army gets more.
Then the Navy gets more.
Then the warplants get more.
Then industry gets more.

THAT'S WHY YOU SHOULD EMPTY CYLINDERS PROMPTLY, SEND THEM BACK IMMEDIATELY, SO THAT ALL WHO NEED "FREON" CAN HAVE IT

Return cylinders to the party from whom you received them or, if purchased direct, to our plant at Carneys Point, N. J. Deposits will be refunded promptly.

KINETIC
FREON
REG. U. S. PAT. OFF.
safe refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

Adjustment in Price Service Ceiling Is Set Up Under OPA

WASHINGTON, D. C.—Sellers of services who base their ceiling prices on the prices of competitiors are allowed to take advantage of any adjustments granted the competitors the OPA announced.

The services regulation (Maximum Price Regulation No. 165 as amended) applies to a wide range of services, such as those performed by laundries, garages, and radio repair shops. It states that when a seller of services cannot determine his maximum price under other provisions of the regulation, his ceiling shall be the highest price charged in March 1942 by the most closely competitive seller of the same class for the same service or the service most nearly like it.

Amendment No. 8 to the regulation, effective Nov. 18, changes that provision to read "the maximum price of the most closely competitive seller of the same class."

The provision in the original regulation, OPA pointed out, was based on the assumption that the competitor's highest price charged in March is always his maximum price. This is not true when a seller has been granted a price adjustment by OPA.

Today's amendment makes sure that a seller whose price for a service is determined with reference to the price of a competitor will be allowed to charge the same price as the competitor.

Dr. Fishbein Tells Why Modern Refrigeration Is Important To Housewife, Food Stores, Doctors

By Morris Fishbein,* M.D., Editor,
Journal American Medical Association and Hygeia, the Health Magazine

The American people have always had the "mostest of the bestest" when it comes to the refinements of civilized living. The figures indicate that we have one motor car for 4½ people; one radio for every five people, and one electric refrigerator for every six people in the United States. We have built ourselves a mechanized civilization, and today not only our comfort but health and life itself must depend to a considerable extent on the manner in which we maintain that civilization during the period of emergency or the rate at which we evolve new methods of living to meet changing conditions.

Today 72% of homes in the United States have refrigerators; only 28% of homes are without them. We could probably do much better without vacuum cleaners, which are available in 50% of homes; the oil burners in some 10% of homes, or the washing machines in 63%.

REFRIGERANT IMPORTANT TO HEALTH OF PUBLIC

I venture to say that any attempt to interfere seriously with household refrigeration will do far more harm than good in the war effort. The reason for this prognosis is the fact that the campaigns for nutrition and for improved health and vitality associated with the food supply and the present conditions of urban living demand refrigeration as a means of meeting the requirements of a balanced diet, maintaining the foods at the utmost quality they possess, and utilizing to the maximum every scrap of food that can be salvaged from the meals of the day.

Obviously the first and chief value of refrigeration for the public health is in the preservation of food. All authorities in the field of nutrition and bacteriology are agreed that refrigeration is the most satisfactory method of preserving foods from the point of view of maintaining their natural characteristics unchanged. In primitive days when every man raised on his own farm the foods that he consumed, the eating of fresh and perishable foods, such as meats, cheese, vegetables, and fruits, was limited wholly to the seasons in which these foods were available.

Today, by the use of modern means of transportation, and particularly of the refrigerated freight car, delicacies like oysters are available anywhere in the United States. At any season of the year, the finest foods are transported rapidly from one section of the country to another. The citrus fruits, now recognized as invaluable for their contribution of vitamins, are to be seen daily on the tables of Americans throughout the nation.

Great Britain is dependent on the dried fruits and on powdered vitamins because of the breakdown of transportation associated with the war, but that is a condition of emergency living.

Most of the substances included as fundamental constituents of a healthful diet, recommended by the National Nutrition Conference for Defense, require competent refrigeration for their preservation. Milk has been mentioned repeatedly as the most nearly perfect food. The dairy industry of the United States today is predicated on refrigerated milk, pasteurized in order to make it safe. Milk is a most excellent substance on which germs feed and grow.

REQUIREMENTS FOR REFRIGERATION IN PRESERVATION OF FOOD

The quality of milk is determined by a study of the number of bacteria that it contains, and the nature of the bacteria. Fresh milk, produced under the best possible conditions, has relatively few bacteria. However, only observation of strictest cleanliness in its handling, and only proper refrigeration during the entire period from cow to consumer, can keep milk safe. Rapid deterioration of the quality of milk occurs unless it is thoroughly chilled and unless it is kept at a temperature around 45°.

The citrus fruits likewise require refrigeration or immediate use. Eggs which are the basis of the human diet require refrigeration if they are to be kept longer than one or two days.

Certainly little needs to be said about refrigeration in relation to the proper maintenance of butter and margarine. Even cod liver oil, which is part of the diet of the growing child, necessary for the provision of vitamins A and D, keeps better and particularly tastes better when kept cold in the refrigerator.

We are in the midst of an important campaign for salvage of much of the fish and meat products that are served by the American housewife as part of the daily diet. Inadequacy of refrigeration will make it impossible to save from meal to meal the unused portions of fish and meat. Indeed, the danger to public health inherent in the use of left-overs which are not properly refrigerated is a serious hazard to human health.

All sorts of food products, particularly those made of milk and eggs, including especially custards and salads, must be refrigerated if they are to be safe for use at a later time. Records are available

(Concluded on Page 9, Column 1)

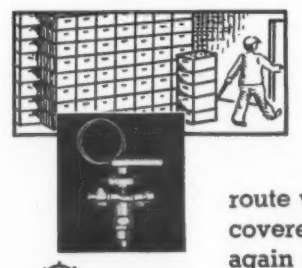
*Address at All Industry Meeting, Nov. 19

It's Time to Tell About Refrigeration's *"Hidden Services"*

..take fluid **MILK** ★ ★ ★ ★ ★ ★ *for instance..*

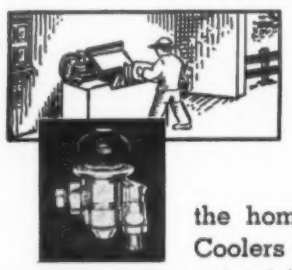
Today, twenty million mothers reached out their back door and brought in the day's supply of cool, fresh, pasteurized Milk — prized body-building and health-giving nutriment for growing or working Americans.

But the Role Refrigeration Played in That Delivered Milk Was a *"Hidden Service"*



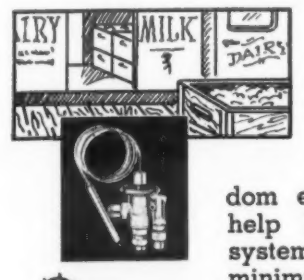
MODEL 215 Thermostatic Expansion Valve

At the Dairy, after the milk is bottled it is stored in large refrigerated rooms, and just before loading on the route wagons, each case is covered with fine ice. This again is a mechanical refrigeration job — "hidden service" that reaches every phase of living.



MODEL 204 Automatic Expansion Valve

Yet Refrigeration started protecting that Milk before it left the farm—and kept right on the job until it reached the home Refrigerator. Milk Coolers on the Farm took the animal heat out of the Milk and had it ready for the Insulated Trucks that delivered it to the Dairy.



MODEL 205 Thermostatic Expansion Valve

A-P DEPENDABLE REFRIGERANT VALVES are "in" on every phase of Refrigeration. Rarely seen, seldom even touched, they help keep Refrigeration systems running with a minimum of attention, certainly a very important point due to our increasing manpower shortage.

AUTOMATIC PRODUCTS COMPANY
2450 NORTH THIRTY-SECOND STREET
MILWAUKEE WISCONSIN
Export Department
100 Varick Street . . New York City

A-P DEPENDABLE Refrigerant Valves

'RECOLD' COILS — WATER-DEFROST
CANADA PAT. 394,209 — U.S. PAT. 2,219,393 — NEW ZEALAND PAT. 82,359

We take pleasure in announcing
that a license to manufacture
WATER-DEFROST COILS
has been granted to:
REFRIGERATION APPLIANCES, Inc.
CHICAGO, ILLINOIS
under U. S. A. Patent 2,219,393

★

BE SAFE - Patronize a licensed manufacturer for your low temperature
WATER-DEFROST COILS.

★

U.S.A. LICENSEES
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McQUAY, INC., MINNEAPOLIS, MINN.
REFRIGERATION APPLIANCES, INC., CHICAGO, ILL.

REFRIGERATION ENGINEERING INC.
LOS ANGELES 'RECOLD' CALIFORNIA

Public Health Association Report Shows How Proper Refrigeration Aids Diet

(Concluded from Page 8, Column 5)

of veritable epidemics of food poisoning resultant from failure to keep salads and custards, and even ice cream, under proper conditions before serving.

I am not suggesting that refrigeration will make a bad food good. Refrigeration never has and never will make a good food out of poor food, but everybody knows that.

There was a time when cold storage labels required by law on foods subjected to refrigeration interfered with public consumption. Today it is a mark of merit, since the storing of foods under sound, controlled conditions of temperature, humidity, and inspection mean that the foods concerned have been given more careful supervision that is accorded to the average food used in the home.

Today the inspection of meats and the supervision of packing house products in cold storage is under the jurisdiction of the Federal Bureau of Animal Industry, and these regulations apply to all products which are shipped in interstate commerce.

The chief value of refrigeration in relation to food is the fact that germs do not multiply and grow under conditions of cold. Refrigeration does not sterilize food, but it does retard spoilage.

In a recent survey of refrigeration of foods made by the special committee on foods of the American Public Health Association attention is called particularly to the utilization of refrigeration in relation to the provision of an adequate diet. This report says:

"Numerous workers have been concerned in recent years with the nutritive aspects of foods, particularly from the standpoint of vitamins, and certain of these researches have related to refrigerated foods in storage. More attention in this respect has been paid to fruits and vegetable products and their vitamin C content, because certain of them attained marked popularity and increased consumption due in part to such content. Such evidence as is at hand indicates that refrigeration of foods containing vitamin C tends to conserve such content in comparison with similar products not refrigerated during storage, although periods of months may diminish the concentration in some foods unless very low temperatures are employed. No evidence that the other known vitamins are deleteriously affected by the use of low temperatures has been presented. This applies also to frozen foods.

"It is believed that during the past few years of reduced incomes the economies of refrigeration have enabled many families to obtain foods in the fresh form during off-seasons at a cost which might otherwise have been prohibitive, thus allowing better balanced and more complete diets which contribute to the health of the individual.

"An example of economy due to refrigeration is the reported distribution to families on welfare of frozen meats produced by the emergency slaughter of food animals in the drought areas by government agencies. These animals, doomed to die of malnutrition otherwise, were conserved or salvaged. It is hoped that such products, helpful as they may be as a source of food, will not be considered by the consumers as representative of the high quality usually found in refrigerated products.

"The applications of refrigeration in the food industries increased markedly in the postwar years. Omitting the dairy industries, which are more properly the field of another committee, it is worthy of mention that refrigeration is now used extensively in bakeries, breweries, candy and chewing gum factories, canneries, food oil hydrogenation plants, cocoa manufacturers, gelatin factories, packing houses, yeast plants, and many others. In some cases the use of low temperatures is for physical reasons, but in large part it is for the conservation of products against spoilage and the possibilities of injury to the health of the consumer. Refrigeration has also been shown to be lethal for various insect pests including the European corn borer. It has also been found effective in killing the larvae of Trichinella spiralis which are the causative agents of trichinosis due to eating pork and its products.

"Thus we may visualize refrigeration as one of the protective forces of our community which functions in large part unseen, although those who are observant may note warehouses at our docks and terminals, precoolers in the harvest regions, insulated and refrigerated freight cars and fast motor trucks—even tank trucks—display cases in our stores which have vastly improved the retail handling of perishable foods, and the vast army of domestic refrigerators in restaurants, hotels, and homes which are of equal importance at the consumers end."

REFRIGERATION IN RESEARCH

I have left for special consideration the place that the refrigerator occupies in every hospital, in every laboratory or research in the United States. Our vast program for procurement and distribution of blood plasma as a life saving measure for our armed forces is dependent on refrigeration.

These materials are refrigerated immediately following their collection and throughout the entire procedure of shipping, processing, and handling, until the powdered plasma is forwarded to the place where it will be used. Already scientists have invented a device which can be attached to every flask of blood and which indicates whether or not the material has been properly refrigerated during its travel from the donor to the recipient.

Investigators in laboratories concerned with germs of all kinds find the refrigerator as essential a part of the mechanism as the test tube and the incubator. In the making of all of the ordinary tests of the blood and of the other secretions and excretions of the human body, the refrigerator is essential for storing specimens until they can be suitably investigated.

In the great campaign for making a Wassermann test on every recruit to the armed forces and on every prospective mother in the United States is dependent on the use of the refrigerator. Thus we find it one of the most important allies of mankind.

Perhaps the following tribute from the American Public Health Association offers the best evidence as to the significance of refrigeration in our lives:

"Your committee views refrigeration as a faithful ally and servant to all food consumers, one which has become so intimately connected with our daily life and existence as to be practically indispensable. Like all servants, it requires proper and strict supervision. Fortunately, in this country, such supervision has been both adequate and capable with rare exceptions. The use and advantages of refrigeration bid fair to expand as time goes on, to the benefit of the health, comfort, and pocketbook of our nation."

The Kind of Misconception the Industry Faces

War Production Board
Washington, D. C.
Nov. 18, 1942

Dear Dr. Fishbein:

Upon receipt of your letter of Nov. 16, I spoke to the men in the WPB who are charged with supplying domestic mechanical refrigerators.

I am enclosing a copy of the News Release and sections of the General Limitation Order, which refers to domestic mechanical refrigerators.

The following additional information may be of some value to you as background material:

In this field, as in many others, consumer habits play an important part in the alleged hardships of which we hear complaints. It has been customary for the public to use mechanical refrigerators for a period of years and when certain parts begin to wear out, instead of replacing such parts, they have turned in the old refrigerator and purchased a new one. That was quite all right as long as new refrigerators were being made in unrestricted quantities. Now, however, the owner of a refrigerator must get himself into the frame of mind to continue with the existing equipment and purchase repair parts. Psychologically, a repair bill involving important new parts which amounts to from $40 to $60, is looked upon as a tremendous expense, even though it may recondition the refrigerator adequately to give quite a number of years of additional use, whereas, turning in the old refrigerator and buying a new one, even though it might involve an expense of upward of $125 is considered a good investment. It would be helpful if this line of thinking were reversed.

It is possible that repair parts have not always been available in every place where they have been needed. However, I am told that generally, there is no lack of repair parts even though the distribution may be retarded somewhat. The possibility of a breakdown of mechanical refrigerators is somewhat like the prediction of illness. One never knows just where and when it may occur.

Although the refrigerator Order prohibits the manufacture of new refrigerators, it does not prohibit the manufacture of parts. There is at the present time no order covering repair parts for domestic mechanical refrigerators, although there is an order for repair parts for commercial refrigerators.

I am told that service organizations which are well-established and which have been servicing domestic mechanical refrigerators regularly, generally, do not have difficulty in securing repair parts. This is not true of a good many independent service organizations which consist of one man traveling units. The latter may be called in to make a repair and if they do not have the necessary part they will indicate that the parts are not obtainable when as a matter of fact the parts are available and a regularly established service unit would either have the parts or would get them.

The Branch of the WPB which has been administering the domestic mechanical refrigerator order has arranged with manufacturers to turn in used parts whenever replacements are made. Thus, the actual loss of metal involved in installing a new part is fairly negligible.

It must be borne in mind, however, that the term "repair part" as used in connection with necessary repair of these refrigerators refers to essential functional parts and not to the frills, such as wire shelves, ice trays, etc. The idea is to keep the refrigerator unit in such repair that it will furnish refrigeration space. The primary purpose of the refrigerator is not to provide ice cubes, but to keep things cold which would spoil without refrigeration.

I am told that so far the manufacturers of refrigerators have been able to obtain materials from which to make repair parts. The Branch of WPB which is handling refrigerators is fully cognizant of the importance of refrigeration to the public health and welfare, and as long as metals are available for any purpose in the domestic economy, they will surely be kept available for keeping refrigerators in repair.

I believe that this information should be reassuring. Should there be some special technical detail on which you require information, please communicate with Lindsay Morrison, Jefferson Junior High School, 6th & Virginia Ave., S. W., Washington, D. C., telephone extension 3364, Republic 7500.

(Signed) Robert P. Fischelis,
Robert P. Fischelis, Chief
Medical & Health Supplies Section
Consumer Programs Branch
Office of Civilian Supply

READY!

NEW DEALER DISPLAY SERVICE

Built for the times!

"Give us educational displays that will help eliminate needless service calls."

"Give us window displays that will identify us with service."

In response to such requests from hundreds of retailers, Westinghouse has developed a new display service. It can be used with *or without* new appliances —is simple, flexible, inexpensive.

There are five displays, each featuring suggestions on the proper care of one specific appliance. In addition, the timely "Care and Use" booklet is offered . . . and provision is made to feature "Repair Service" if desired.

CHOOSE from the following displays, *each $1.00,* postpaid:

2FL-2914.....Washer
2FL-2915.....Refrigerator
2FL-2916.....Electric Range
2FL-2917.....Electric Iron
2FL-2918.....Vacuum Cleaner

Each set is printed in two colors (different color schemes) and consists of 12 cards, paper streamers and two large tie-in window posters.

RANGE DISPLAY
2FL-2916, illustrated. Printed in two colors, throughout.

WASHER DISPLAY
2FL-2914, illustrated. *Old* or rebuilt washer can be used.

Specify form numbers when ordering from your Westinghouse Distributor. And be sure you have ample stocks of the "Care and Use" booklet, form 2FL-0201, price 1c each.

WESTINGHOUSE ELECTRIC & MFG. CO.
MANSFIELD, OHIO

Westinghouse *Electric Home Appliances*

MANPOWER

California Bureau's Schools Eases Service Man Shortage in West

SAN FRANCISCO — Major appliance dealers here who have attempted to go into service work through the work and find it impossible for the lack of skilled employes are now being given an opportunity to go ahead with their plans since the Northern California Electrical Bureau here has opened servicemen-training classes.

Approximately 50 skilled workers per month are being turned out and sent immediately into retail dealer's shops, according to the Bureau—all composed 100% of men beyond 50 and thus not subject to the draft, women of all ages, and younger men with physical disabilities.

Classes were opened in late August at the Samuel Gompers Trade School in San Francisco and Central Trade School in Oakland, following a survey made by the association of the plight of dealers in northern California. Classes are open to anyone who can prove himself exempt from military service.

The first call for trainees produced more than 500 applications (more than triple the number which had been expected). Almost all of the men and women applying it was found, had some experience in the work in the past. Classes of 22 members each were chosen from among this group, the remainder given notice to begin new classes at a later date. The entire 500 will be trained within a few months, it was emphasized by the association.

Training is given without charge of any sort, school space donated by Oakland and San Francisco, and instructors paid from association dues. Approximately 35% of the first graduating class was composed of women from 20 to 35 years old, and for whom dealers showed a preference in most instances. An appeal will be made for more feminine trainees.

The course covers 80 hours to be completed in 34 days. Each candidate is allowed to specialize following a general course to familiarize them with all appliances first. Mechanics specializing in washing machine repair, refrigerator service, commercial refrigeration maintenance and small appliance repairs have been most heavy in demand.

Appliance dealers who plan to make service work at least pay the overhead for the duration register with the association, state a preference for older men, disabled men or women, and graduates are sent to them immediately upon graduation.

'Manning Tables' Will Be Used in Setting Industrial Deferments, Colonel Reveals

Management Group Hears About Women in Industry

NEW YORK CITY—Only jobs requiring a minimum of three years' training will be "draft-proof" from now on warned Lieut. Col. H. J. Schwabacher, liaison officer for the Service of Supplies and War Manpower Commission, at the opening session of a two-day production conference of the American Management Association held here recently at the Hotel New Yorker. Other speakers at the meetings brought out related facts.

Col. Schwabacher stated that occupational deferments will soon be granted on the basis of "Manning Tables" filled out by essential war industries to give their personnel requirements, an inventory of plant jobs, and periods of time it would take to train replacements for workers now employed.

ELIGIBLE COMPANIES

Only companies doing 75% war work, and essential civilian activities such as public utilities and railroads will be eligible to participate in the "Manning Table" plan, he added.

"There are certain jobs," Col. Schwabacher said, "which actually require a period of training of five years or more. The men who hold these jobs and those whose jobs require a three-year training period will not be taken. Then there are jobs which require a two-year training period. These workers will be inducted two years from the time the plan becomes effective."

The same pattern will apply for men whose jobs require a year's training, he explained, but asserted that workers whose replacements could be trained in six months or less "will be given no consideration."

"The deferment of manpower is only a 'loan' to industry," the colonel pointed out. "As the supply of 'unmortgaged' persons becomes exhausted, then we will have to call in these loans."

WOMEN REQUIRED

At an afternoon panel session on "Women in the Factory," Esther R. Becker, staff assistant of the New Jersey district training-within-industry unit of WMC, predicted that by the end of 1943, 5,000,000 more women will be needed in war work, with a similar increase made by the close of 1944. The United States with a population of 140,000,000 has only 2,500,000 women in war work today, she revealed, while Germany with a population of 80,000,000 has 9,000,000 women in war work and England, whose population is 46,000,000 has 7,000,000 women so employed.

She insisted that women are fully capable of doing all the jobs of men, including welding, running laboratories, and driving a 10-ton, 10-wheel truck. Urging employers to give women a chance to do their part, she stated that the ability to lift heavy loads marks the only difference between work-results of men and women.

TO HIRE 20,000 WOMEN

David Mack, employment manager of the Wright Aeronautical Corp. of Paterson, N. J. reported that his company, preparing to eventually hire 20,000 women, has had an outside organization survey New Jersey women's attitude toward war work. Results show, he revealed, that most women do not consider labor shortage severe enough yet to warrant their applying for such work. The survey also found that women in general misunderstood the classified ads and remember previous unfavorable experiences with employment offices.

Mr. Mack criticized the mechanical and impersonal treatment by such departments, judging it all right to use with men accustomed to fighting for a job, but not at all satisfactory for women applicants.

James M. Talbot, vice president of the S. S. White Dental Manufacturing Co. of Staten Island, maintained that previous concepts of different wage rates for men and women will have to be changed to equal wages for equal performance based on job evaluation.

In a discussion of wage stabilization, Ralph T. Seward, associate public member of the National War Labor Board, told the conference that the board faced three major problems in that field—jurisdiction, policy, and machinery through which applications for wage increases could be made. NWLB has already blocked one serious loophole, he said, by considering as wage-rate increase the hiring of new men at rates higher than those established at the plant. If there is no established plant rate, he added, the rate for similar work prevailing in that locality becomes the criterion.

For cases of maladjustments the board is still using the Little Steel formula as its chief guide, Mr. Seward declared, but reminded employers that this formula applies only to average, straight-time, hourly rates and not to individuals.

As indicative of how the board will react to upgraded increase, he advised watching for the decision in the American Telephone Co. case, which will be handed down soon. NWLB will consider inequalities, he concluded, only when it is necessary to correct apparent injustices.

Another conference speaker, L. C. Morrow, editor of Factory Management and Maintenance, told the association that American industry could carry out its war production objectives if it could solve problems presented by the three limiting factors of production—manpower, materials, and management.

Service Operator Gives Hints on Maintaining Staff

ST. LOUIS.—Ordinary methods of hiring and keeping experienced refrigeration service men just won't do in the present emergency, states Jack Daniels, head of City Refrigeration Service Co.,. one of the largest service organizations in this city.

"Help wanted ads and appeals to employment agencies are useless now," he claims. "With the government snapping up all the men it can find at wages far more than we can pay, naturally we're not going to be able to get the best. But," he adds, "we can use specialized methods to obtain good replacements and most important of all, to hang on to our veteran service men."

HOW TO GET HELP

To keep an efficient personnel that can handle heavy business, Mr. Daniels advises:

1. Re-hire former service men who have left for other work several years ago. Many will find their new jobs endangered by war priorities and related conditions, and will be glad to return to the refrigeration field if the idea is well presented. Check your own ex-employe list, and those of companies now out of business. Track each man down and invite him to re-enter the trade.

2. Bring retired employes back to work. Many older men are anxious to take part in the war program but are barred from defense plants because of age. Carefully followed up, they can return to refrigeration work part or full time with only a little review.

3. Use part-time workers. There are many physically handicapped men who are trained mechanics to be found through federal employment agencies. Married women also can do secretarial work, cleanup jobs, and even handle small repairs, on a half-day basis.

4. Use high school students. There are a number of apt, deserving teenage boys who can do many types of work, learn fast, and would fill in afternoons and week ends. Some could relieve the shop crew and even work on outside calls as helpers until trained for specific work.

HOW TO KEEP HELP

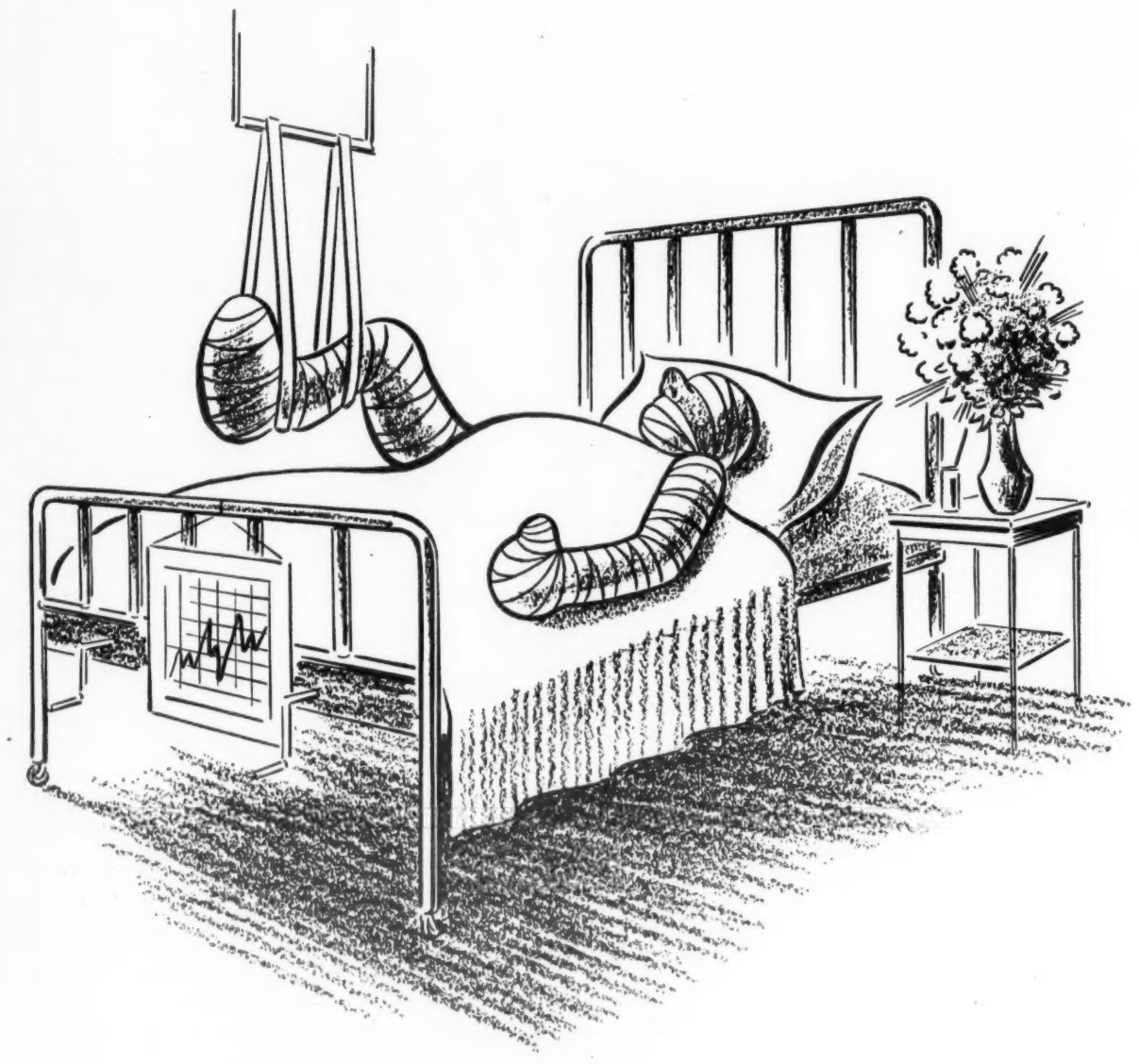
To keep a good man on the job, Daniels suggests;

1. Make the refrigeration service man proud of his job and aware that he is doing his part in the war effort. Many overlook this angle and cast about for direct war work.

2. Point out that the service man will actually earn more over a five year period in his present job than in war work which may collapse suddenly. Show by figures from the last war, that most men staying on their peace jobs made better earnings and were not faced with seeking new work after the war. Show also, that refrigeration industries can continue to give them employment long after the last war plant has closed down.

3. Raise salaries as much as possible. Few firms can pay anything like munitions factories, but they can raise wages enough to show the employee that he is sharing in the profits. Higher costs of living makes this necessary, and it is better to spend money to keep men than to waste it training new workers.

4. Finally, make life on the job comfortable. Give the men clean, attractive showers with plenty of hot water, sanitary restrooms, a pleasant place to eat and smoke during light hours, and warm surroundings. These count heavily. Pay bonuses for good work, and make your personnel feel that each member is an associate in your business, eligible for promotion.



"Time out" for Repairs

"Time out" for repair of refrigeration systems is serious these days when refrigeration dealers are hard pressed for men and material. Too long a "time out" may mean spoilage of food for our armed forces, our war workers, our families.

In the interest of conservation of time and in the education of new service men entering the refrigeration field, we have prepared a "Service Analyzer", (Form 1147) describing troubles encountered in refrigeration systems, their symptoms and probable causes. Also available is a bulletin on "Operation and Testing of Thermostatic Expansion Valves", (Form 1098).

This information will help you cut down "time out" for repairs. Write for your copies today.

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Canadian Representatives: Railway & Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

For: TRUCKS, LOCKERS, COOLERS, COUNTERS, CABINET CONVERSIONS, *use:*

KOLD-HOLD PLATES

KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

Dealer With Perfect Record of Okays Tells How To Use PD-1A Correctly In Selling Essential Commercial Jobs

ATLANTA, Ga.—Crediting priorities form PD-1A an asset in their sales efforts, several Warren Co. commercial refrigerator dealers report successes scored in getting War Production Board approval of applications to install equipment for customers.

Tallying with suggestions carried in previous issues of AIR CONDITIONING & REFRIGERATION NEWS, they assert that examination of the form and clear, complete answers to its questions are the main points to keep in mind when applying for priority ratings.

They also have discovered sales value in the powerful buying incentive created when a prospective customer realizes that his application has been approved; that he is being favored with a high priority rating.

THE SEVEN STEPS

Seven steps to follow when using form PD-1A are given by a Warren dealer who has achieved the perfect score of 20 approvals out of 20 applications, with no rejections. He says:

"1. Make your customer give accurate and complete answers to all questions—don't assume the officials at Washington will know of the problems and conditions of the individual prospect that you have sold. Give them the right information, and in doing so, give complete information.

"2. Wherever possible specify the increase in business over the like period during the past year. Be specific and give accurate figures.

"3. Name the Defense Projects, mines, mills, and factories located near the purchaser's store, and give percentage of customers employed in those war plants. Name the products these plants produce, and how many employed therein—their relation as customers to the prospect's store.

"4. If application is for additional equipment, so state, and if for replacement, be certain to state why it is necessary to replace. In instances where repairs are prohibited by excessive costs, then so state, and supplement with a statement from an authorized refrigeration service mechanic that repairs are not feasible and for what reason they aren't.

"5. Be certain to specify age and condition of the equipment if to be replaced — state if critical comment on such equipment has been made by health or other authorities.

"6. If equipment has been repaired in an effort to save, so state, and why the repairs were not satisfactory. Have deliveries from suppliers (packing houses, etc.) been restricted on account of gas and oil and tire rationing? If so, how has it affected the applicant?

"7. Have there been food losses due to inadequate refrigeration, and is the food procured from local markets? If not secured locally, state if it is necessary that undue large quantities are purchased at a time in order to maintain proper stocks when supply is uncertain."

LETTER IMPORTANT

"Of equal importance," states the salesman, "is a personally written letter from the prospective buyer setting forth the true conditions relative to his situation and why he is asking for relief. His appeal in his own individual style is certain to be considered, and if his situation is different from his neighbor, then he is given different consideration, if his case warrants it and he asks for it."

The history of PD-1A bears out these suggestions.

Form PD-1A was issued last February to provide a preference rating, at the discretion of WPB officials, to business men who could not get adequate priority assistance through any of the other Priority Orders. As such, it became an effective potential aid to the refrigeration industry, which until that time had virtually no chance of getting a preference rating through other orders, although all new equipment — even essential installations—had been restricted by Limitation Order L-38.

According to L. C. White, Chief of the Distributors Branch of WPB, form PD-1A was to be used only for the ultimate consumer—say a dairy store manager—to secure release of equipment from wholesaler or manufacturer. Use of the form became mandatory March 15, 1942.

As set up by WPB, a dealer could assist a buyer in filling out the application, but the person to whom the rating was issued—the ultimate consumer—kept the certificate, extending it to his supplier when actual purchase of the equipment was made.

BACKGROUND OF PD-1A

PD-1A was not be used where government contracts were involved; form PD-3A was provided for such orders. It was not to be used, either, by dealers, distributors, or wholesalers, to increase their inventories by purchase from the manufacturer; form PD-1X was the correct form for that purpose.

In April, after PD-1A had been in use about two months, the Air Conditioning and Commercial Refrigeration Branch of WPB requested that questions asked on the form be answered in greater detail, and explained that rating assignment was delayed and hampered by sketchy information given.

The branch stressed that questions 2, 3 and 7 especially needed development. Question 2 relates to the function of the desired equipment and the type of establishment in which it will be used; question 3 asks for a complete description of material desired and the name of the supplier; and question 7 asks for the supply situation if the request is not granted.

White Claims Inventory Rules Have Been Violated In New York & New Jersey

NEW YORK CITY — Wholesale violation of War Production Board inventory and priority regulations by New York and New Jersey area distributors of electrical and refrigeration supplies and other products made of critical materials was charged by Linford C. White, chief of the WPB distributors branch, in addressing a meeting of 1,600 distributors held here Nov. 13 at the Hotel Commodore under auspices of the WPB and the New York Board of Trade.

The distributors were told by White that the WPB planned to conduct a blanket investigation of the situation, a spot check having shown that, out of 70 cases investigated, not one had been found living up to WPB regulations governing inventories, reporting and replenishing of stocks under priorities.

"From now on," he warned, "we are going to get compliance with orders. Any persons who are getting critical materials these days under false pretenses are more than chiselers. They're just plain thieves."

In calling upon the distributors to maintain a buying record or a perpetual inventory of the more critical items, White added that a distributor to turn over his stock properly cannot go along without such records. He also urged that they cooperate with each other, even to the extent of exchanging scarce items to meet all demands.

Also emphasizing the need for co-operation, if distributors want to stay in business, Raymond C. Neal, special consultant for the WPB distributors branch, declared:

"The only way you will be able to stay in business is to do, first, for the war effort, all in your power; second, to place business as usual, selfish aims and profits at the bottom of the ladder. An approach such as this will carry its own reward—you may be sure of that."

Commenting on L-63, the inventory control order, Neal said that there is perhaps no order that has more far-reaching effect in its intent for the conservation of metals and finished goods than this order. Without it, he said, the present inventory evaluation of two billion dollars "might easily have been doubled." He explained that the order was designed to reduce distributors' inventories to a level where a 60-day supply of any one item would be considered a substantial working stock.

Furniture Replaces Appliances

HARRISBURG, Pa. — Major appliances are being replaced throughout with modern moderate-priced furniture at the Hall Electric Store here. Rugs, bedding, and small furniture lines will be added a little later, according to the management.

HOW THE AMENDMENT TO THE SILICA GEL ALLOCATION ORDER AFFECTS *You!*

1. SERVICE ENGINEERS: Now you may purchase and use up to a total of 125 pounds of Silica Gel in any one calendar month without filing allocation forms.

2. JOBBERS: You may now purchase Silica Gel—*and we can supply you promptly*—up to a total of 125 pounds in any one calendar month without filing allocation form PD-600. Should you need more than 125 pounds per month, Silica Gel is available by filing PD-600 as heretofore. You may now deliver to your customers amounts not to exceed a total of 125 pounds per customer in any calendar month without filing PD-601. Should any one customer require more than 125 pounds per month, PD-601 must be filed as in the past.

3. SPECIAL EXEMPTION: No allocation forms are required to purchase or deliver dehydrators charged with Silica Gel.

The problems of the refrigeration industry are our problems. It is our policy to continue our cooperation, whenever possible, in the industry's efforts to safeguard its past accomplishments and to assure its future development.

HAS 1½ TO 2 TIMES AS MUCH CAPACITY AS OTHER DRYING AGENTS — ACTS INSTANTLY—REMOVES ACIDS—WILL NOT DUST NOR POWDER.

Keep 'Em Running with Davison's

SILICA GEL

"MOISTURE'S MASTER"

THE DAVISON CHEMICAL CORPORATION

Silica Gel Department

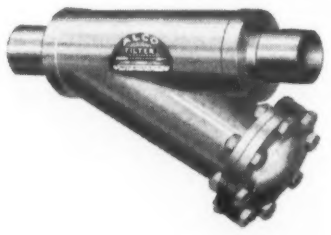
BALTIMORE • MARYLAND

Keep the System CLEAN—
You'll Prolong the Life and Maintain the Efficiency of Your Installations

WARTIME restrictions have made it a vital matter to extend the life of your present equipment—to make it last as long as possible at peak efficiency.

Proper care of Filters and Dehydrators in any refrigeration system will conserve the life of your Alco Valves as well as maintain the entire system to the best possible advantage. Conservation and maintenance are vital considerations today when replacement parts and new equipment may not be available for ordinary uses. Alco suggests the following:

FILTERS and DRYERS



1. Keep filters clean. Dirt in the filter may burst the screen — prevent your Thermo and Magnetic Valves from seating. It also creates a pressure drop and causes "flash gas." The result may be erosion of the pin and seat of the Thermo Valve.

2. Dehydrators should not be left constantly in the system unless of the silica gel type. Drying agents tend to get into the system itself, to plug the Thermo Valve, and are generally injurious if left in too long. The drying agent should be renewed from time to time and both dryers and filters should be of adequate size. Manufacturers' recommendations should be closely followed, as too small sizes cause "flash gas."

These service suggestions are published by Alco Valve Company to help you conserve existing refrigeration equipment and to lengthen its life of useful, efficient service.

ALCO VALVE COMPANY

2610 Big Bend Blvd. St. Louis, Missouri

Engineered Refrigerant Controls

THE STANDARD OF THE INDUSTRY

Newcum Explains Priority Regulations Affecting Refrigeration Industry

• • •

Intricacies of Orders P-100 and P-126 Are Explained; Proper Records Must Be Kept of All Priority Transactions

By K. M. NEWCUM, Vice President,*
Superior Valve & Fittings Co.

To make the best use of priorities is to understand thoroughly the priorities system as it applies to the refrigeration and air conditioning industry.

Confusing though it be, the commercial refrigeration and air conditioning industry is fortunate in having available for its use, priorities machinery sufficiently comprehensive to cover manufacturing, distribution, installation and servicing.

Since this meeting is concerned principally with maintenance and repair of existing refrigeration equipment, more should be known about Preference Rating Orders P-100 and P-126, for they are the only preference rating orders applicable to material for maintenance and repair of refrigeration and air conditioning equipment.

P-126, which expired Oct. 31, 1942, has been extended to Nov. 30, 1942. It now is reported to be in process of a complete overhauling, preparatory to reinstatement as a revised order in the near future. It is expected that higher ratings will be available under the new order.

Since P-126 is available only to those who are authorized under the order, many service companies must depend for their priority assistance upon Order P-100, with which we all by this time should be familiar. Unfortunately, however, many are not.

P-100 permits any person — using tools or equipment to repair or maintain refrigerating equipment located in stores and restaurants—to assign an A-10 rating to an order to a supplier for material needed to make the repair. The A-10 rating under P-100 may also be assigned to material needed for repair of refrigeration equipment in cold storage warehouses.

P-126 provides for the assignment, by an authorized service agency, of the following ratings:

(1) A-1-a, for an actual breakdown of refrigerating or air conditioning equipment used for the processing, transportation and storage of food and dairy products for the United States Armed Forces, cold storage warehouses, meat packing houses and blast furnaces;

(2) A-3, to avert an immediately threatened breakdown to refrigeration equipment in the aforementioned bracket, and also to repair an actual breakdown of refrigeration and air conditioning equipment when used for processing, transportation, or storage of food and dairy products in retail establishments where food is sold or served, **but excluding domestic mechanical refrigerators.** The A-3 rating may also be applied for use in defense plants where the repair of the refrigerating equipment is necessary to the completion of the defense contract; and

(3) A-8, to the delivery of material to divert an immediately threatened breakdown of equipment mentioned in (2), and also for emergency service to all other refrigeration and air conditioning equipment (except any domestic mechanical refrigeration) when such deliveries are needed to maintain an emergency service inventory.

VIOLATIONS OF ORDERS

That wholesale misuse and abuse of Orders P-100 and P-126 has made law violators out of many members of our industry is a regrettable fact.

Abuses have been through ignorance, liberal interpretation, misunderstanding, indifference, and often in outright defiance of the law. Most violations of P-100 are apparently the result of a mistaken opinion that "if nothing else seems applicable, assign an A-10 under P-100."

It appears also that a small percentage of us trusting souls have permitted ourselves to believe that a bureau such as WPB can pass a law with teeth in it. Well, please believe it, it's true, as many may learn from experience, when decreased pressure on WPB for new and revised preference and limitation orders permits time for wholesale check-ups of existing and expired orders.

RECORDS REQUIRED

Remember that records of each transaction where a rating is applied are required to be maintained for a period of two years after date of transaction. Even failure to keep the required records may be construed as being a violation. Readers of AIR CONDITIONING & REFRIGERATION NEWS will already have read reports of several violations which have been punished by the withdrawal of priorities assistance.

Admittedly, it is confusing for persons long removed from detailed study and close concentration to be required to fully digest the contents of even the simplest preference rating order. They were written by men with legal minds. They are laws, and are so considered when violations are taken into our courts for trial.

Therefore, it is recommended that an attorney be consulted when you are in doubt about the application of ratings, because when you have signed your name on the dotted line after the clause "with the terms of which I am familiar" . . . well, the court has a perfect right to expect that you knew what you were doing, and will in all probability act accordingly.

As is quite well known by this time, Order P-100 replaced Order P-22, the original maintenance and repair order. As originally written, it applied to refrigeration only when used in cold storage warehouses and the like. It finally was amended, after a well founded demand for priority assistance for repair and maintenance of refrigeration equipment in stores and restaurants. In reading the order, one should have no difficulty in interpreting it to mean just that — maintenance and repair of refrigeration equipment in stores and restaurants.

APPLYING RATINGS

For the purpose of applying priority ratings under P-100 and P-126, "maintenance and repair" means replacing or repairing any broken or worn out parts which were originally on the refrigerating or air conditioning equipment. For example, the replacement of a broken or badly worn belt; the replacement of seals, discharge or suction valves, crankshafts, and other compressor parts, if such parts are beyond repair; even the entire compressor body could be replaced if the old one was beyond repair.

If at a later date it is found possible to repair the old body, it should be used only as a replacement in stores and restaurants and **not** for some other job, else a violation would result.

MAINTENANCE AND REPAIR

In brief, maintenance and repair as defined, means specifically the replacement of parts which are required to put the system back in sound operating condition.

Hence the ratings may not be used on orders for material to be used for any domestic refrigerators (and this is interpreted to include multiple apartment house systems), to install an additional evaporator, heat exchanger, hand valve, liquid indicator, or any other convenience, addition, or expansion to a present system, or to install any new or used refrigerating equipment in whole or in part.

Many manufacturers have had the experience of receiving orders with an A-10 rating under Order P-100 covering large quantities of what is definitely known to be installation material and not maintenance and repair material as defined. Orders also have been received for substantial quantities, admittedly for inventory. This gets back to the idea that previously was mentioned—that is, "what the h—, assign an A-10 under P-100 to it."

MISINTERPRETATIONS

Paragraph (3) (iii) of Order P-126 seems also to be vulnerable to misinterpretation. It reads: "An A-8 rating may be assigned to material when such deliveries are needed to maintain an emergency service inventory."

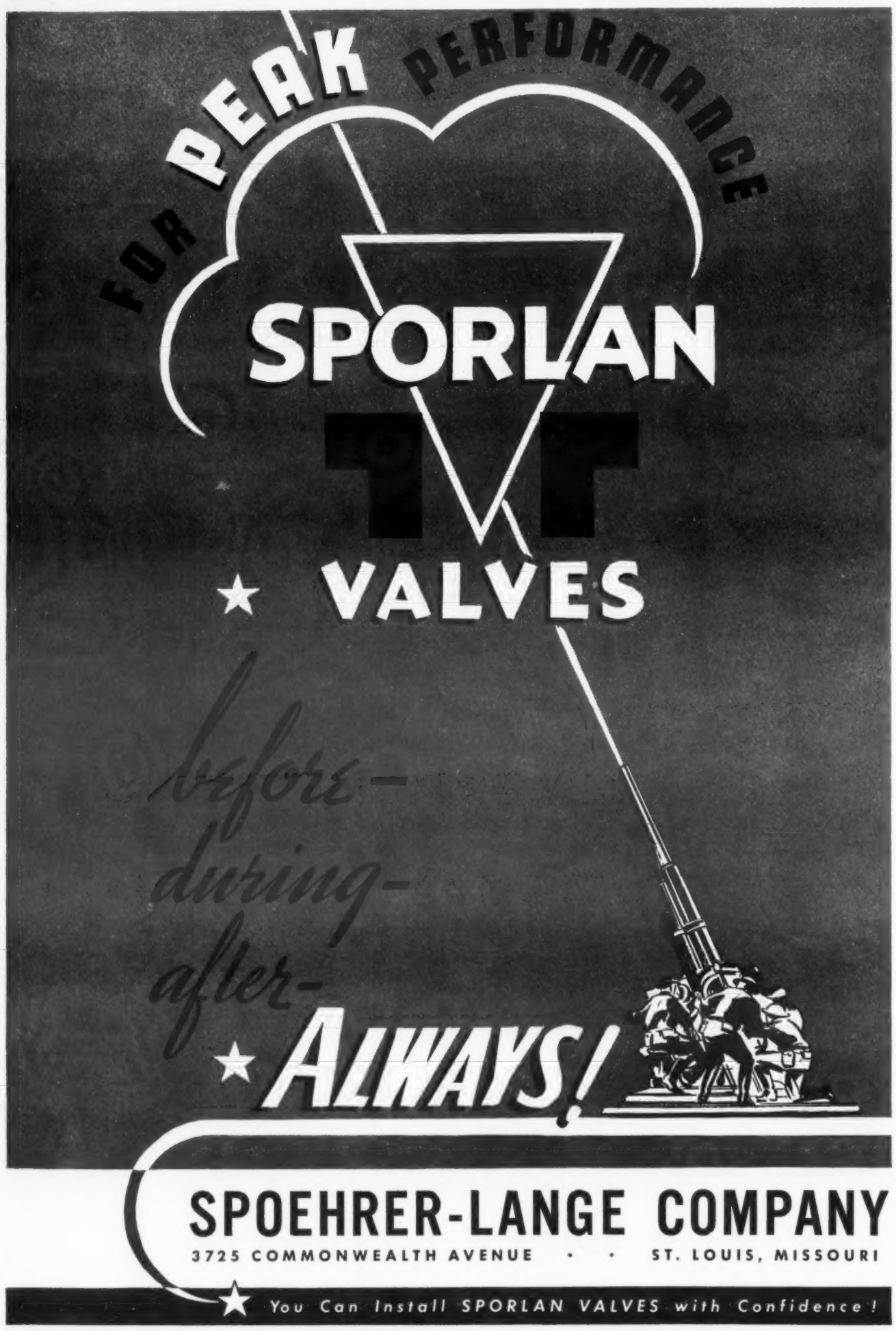
When read casually, one would gain the impression that an A-8 rating may legally be assigned to stock orders for most any material needed. Such is not the intention of the order, as is readily evident when a check is made of the definition of "emergency service inventory." In other words, it is a violation and a misuse of Order P-126 to assign any rating to materials other than replacement parts and material for maintenance and repair as clearly defined in the order.

WHAT NOT USED FOR

The order also points out very clearly what the ratings under Order P-126 may **not** be used for. Included in the order is a list of material which specifically may not be obtained through priority assistance under Order P-126, parts of which are quoted as follows: "To aid in the conversion of an existing refrigerating system from the use of one refrigerant to another," and "To

(Concluded on Page 13, Column 3)

*Address at All-Industry meeting in Chicago, Nov. 18.



Gilmer BELTS

With refrigeration and air conditioning becoming increasingly important to war industries, there's more room than ever for the quick, efficient service man.

That's where Gilmer Belts can help you. Their long life and hefty pulling power add up to customer satisfaction and good-will. Since they're still available, you can depend on Gilmer Belts to stand by you through the war-time trials ahead.

L. H. GILMER COMPANY
TACONY, PHILADELPHIA, PA.

BUY DEFENSE BONDS & STAMPS

★ Refrigerants are vitally needed to protect the nation's food supply; conserve them by careful, efficient use. ★

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AGENTS FOR KINETIC'S "FREON-12"
VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

Industry Conference Speaker Sees End of Private Enterprise If War Goes Beyond 1945

CHICAGO—"If the war goes beyond 1945 we cannot save our system of private enterprise," Dr. J. Raymond Schutz, president of Standard Life Insurance Co. of Indiana, told approximately 500 refrigeration manufacturers, jobbers, and servicers at Thursday's opening session of the all-industry conference held here Nov. 19-20 at the Palmer House hotel.

The opening session at which Dr. Schutz spoke was assembled by John Wyllie, Jr., of Temprite Products Corp., Detroit, this year's president of Refrigeration Equipment Manufacturers Association.

WYLLIE GIVES PURPOSE

Mr. Wyllie set as goals for the conference, finding out what the industry's war problem is, getting information on the problem, and using that information to best advantage.

"If ever we needed to pool our resources—materially and mentally—we need to do so today," he declared. Explaining how the meeting had grown spontaneously from the regular fall Rema business meeting to a general conference of the entire industry, Dr. Schutz's talk on "Democracy or Slavery" completed a trio of war speeches including "Are You Making the Best Use of Priorities," by K. M. Newcum, vice president and sales manager of Superior Valve & Fittings Co. (speech printed in full in this issue of AIR CONDITIONING & REFRIGERATION NEWS) and "The Filing of Prices Under OPA" by Edward P. Wells, chief of Trade Relations for the Chicago Metropolitan office of OPA.

3 STAKES IN WAR

Dr. Schutz, pleading for an all out effort now on the part of business, named as three stakes in winning the war soon:

1. Saving lives of half the boys who would be killed if the war lasts through 1944-45.
2. Stabilizing our national debt.
3. Preserving our system of private enterprise.

Admitting that "one man's guess is as good as another's," Dr. Schutz nevertheless declared he was confident we could finish the job next year by an all-out effort now. To successfully end the war, he listed four M's that America must have—Men, Materials, Money and Morale. "And we are going to have to have them in sufficient quantities and in right proportions," he emphasized.

Dr. Schutz maintained that a better distribution of manpower must be made voluntarily or a forced distribution could be expected. Giving up trained workers to the war effort is part of the sacrifice business must make, he stated.

ATTACKS SILVER BLOC

Touching on the need for materials, Dr. Schutz attacked the Silver bloc in Congress that is barring that metal from industrial use. At the same time he praised efforts to round up scrap.

To avoid the threat of credit inflation, Dr. Schutz advocated paying the war debt as we go by putting 40% of our income into war bonds. Ten percent is not enough, he pointed out, since the present tax bill accounts for only one-half the estimated war costs of $77 billion this year and $143 billion in 1943.

Citing France as an "everlasting" example in lack of morale, Dr. Schutz warned that America could have men, materials, and money, but still lose the war if the fourth M were missing.

VISITED WITH HITLER

He told the conference that this war should clarify for all time to come the difference between "streamlined savagery" and democracy and asserted that all persons who want our side to win are our allies. "Our allies are people, not nations," he said, "and we have 15 million of them in Germany."

In his talk, Dr. Schutz described personal contacts he had had with Hitler during several visits to Germany since World War I.

Hitler has come a long way today toward realizing that philosophy regarded as "crackpot and fanatical" by most Germans in 1926—that there are only two ways of life, each totally unalike; that the world is not big enough to hold them both; and that he is out to completely destroy the one that we (America) believe in.

"It is worth a few years' profits to make a world that's decent and that respects the sanctity of human personality," Dr. Schutz declared.

Newcum Tells How To Use Properly Priority Orders P-100 and P-126

(Concluded from Page 12, Column 5)

obtain parts, including (but not limited to) the following, for installation with new refrigerating or air conditioning equipment, or for replacement (other than emergency replacement), or for the expansion of existing facilities:

a. Automatic controls, either domestic or commercial.

b. Copper tubing or fittings.

c. Copper tubing or pipe for the maintenance or winding of lowsides or pipe for the manufacture of coils.

d. Suction or liquid valves whether manually operated, thermostatically or by pressure.

e. Water control valves, whether operated electrically or by pressure.

f. Expansion valves of any description.

g. Complete lowsides of any classification, including water coolers, carbonated water coolers and malt beverage coolers.

h. Copper tubing for the fabrication of water coolers or beverage cooling lowsides.

i. Complete highsides, with or without controls, and with or without motors.

j. Component parts for highsides for assembly into complete units.

k. Electric motors.

l. Flash type baffles for the modernization of existing installations.

It therefore seems obvious that Order P-126 is intended to afford priority assistance only to replacement parts or materials to be used strictly for repair and maintenance of existing equipment. To plug the leaks, and to prevent further abuse, it is hoped that the revamped order will require an old part in exchange for a new part. This then will definitely limit the use of the priority assistance to the obtaining of replacement parts.

DOMESTIC REFRIGERATION

Since no priority assistance has been given domestic refrigeration in either P-100 or P-126, it is reasonable to assume that some material obtained by P-100 or P-126 priority assistance has found its way into domestic refrigerators.

Rumors have it that certain suppliers are demanding that servicemen sign the required endorsement under P-100 before releasing domestic refrigerator repair parts.

Such a practice is not only a disgrace to our industry but is a willful violation of the spirit and letter of the order. To obtain parts for domestic refrigerators, suppliers should make application on Form PD-1X. The parts thus obtained should be sold to servicemen without priority rating.

When material is desired for the installation of new or used refrigerating equipment, or for the expansion of a present system, it is necessary that application be made on Form PD-1A. Priority assistance thus obtained may be extended to a supplier.

As will be revealed as this meeting further progresses, the priority ratings available to the maintenance and repair portion of this industry have been grossly inadequate. It is hoped that ratings under the revised P-126 will be sufficiently high to permit scheduling of orders for repair and maintenance parts. At present, the ratings are much too low to permit scheduling, hence it is a "hit and miss" proposition with the manufacturer, who, through no fault of his own, cannot always schedule low rated orders when his plant is filled to capacity with orders bearing ratings in the AA series.

SENSE OF RESPONSIBILITY

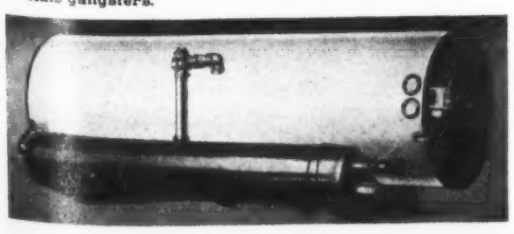
If in revamping P-126, higher ratings are made available, then each authorized service agency should feel a deep sense of moral responsibility to WPB officials to see to it that the privileges under the order are not abused by applying the ratings where they are not applicable.

As the matter now stands, manufacturers, who have the heart-breaking task of securing materials, are convinced that all P-100 or P-126 rated orders placed with them are not for parts actually needed for maintenance and repair.

If, however, we all put our houses in order to the extent that maintenance and repair ratings are assigned only where they are needed, I feel confident that the parts manufacturers will not let the jobbers and servicemen down during these critical months ahead when the pressure for increased military production will be terrific.

"DAY & NIGHT" HELPS TO COOL HOT HOPES!

"Day & Night" Storage Type Water Coolers provide cold water for cooling processes in the manufacture of armament and munitions...the tanks, guns, shells and ships which spell the end of the high hopes of the Axis gangsters.



Model C2W140135 High Suction Pressure Insulated Tank Cooler. Made in capacities of from 25 to 150 gallons. Normal suction pressure Insulated Tank Coolers with capacities from 2 to 105 gallons

☆ "Day & Night" Storage Type Water Coolers are used in all kinds of applications wherever cold water is required for cooling jackets, welding tips, grinding wheels, quenching hot metals...and quenching the thirst of the men who are "keeping 'em rolling." Each "Day & Night" Cooler is a "package" unit, ready for installation. The complete line includes all types and sizes in accordance with latest W. P. B. Regulations.

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The Bush Mfg. Co. Bulletin

THE BULLETIN WITHOUT THE "BULL"

DEAR HERMAN:

YOU'RE THE FELLOW WHO USED TO KNOW ALL THE ANSWERS... THE BOY WHO KNEW HIS WAY AROUND! AND NOW YOU WRITE ASKING ME WHAT YOU SHOULD USE FOR BUSINESS. HERMAN, YOU ARE A DISAPPOINTMENT TO ME. WITH EVERY PLANT IN YOUR TERRITORY ON WAR PRODUCTION... NEEDING EVERYTHING FROM BACTERIOLOGICAL CABINETS TO RIVET COOLERS... WITH HIGH PRIORITIES... YOU ASK ME WHERE TO GET BUSINESS. HERMAN, YOU HAVE TO GET OUT AND MEET THESE NEW BUYERS. YOU HAVE TO BREAK THE ICE TO CATCH A FISH.

PENGUIN PETE

BUSH MFG. CO.

★ *Commercial Cooling Units*

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F. M. COCKRELL, *Founder*

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Refrigeration Will Help Win the War

Angles on the Manpower Problem

NOW that the War Production Board is on the way toward more clean-cut control of materials flow and product scheduling, the next embroilment that needs untangling is the manpower situation. That isn't news, of course; the papers are full of it. But perhaps some of the following "advance thinking" may prove helpful to those still worried over conflicting statements and a lack of authoritative policy making.

First, as to the demands of the armed forces: Wild predictions of an army of 13 or 14 million are now set to rest by Secretary Stimson and President Roosevelt, who have declared that the Army will build up to 7,500,000 by the end of 1943, and the other services to 1,500,000.

ARMY MAY SET AGE LIMIT NOMINALLY AT 35

Draft of 18-and-19-year-olds takes the heat off older men, whom the Army doesn't want anyway. It is entirely possible, we are informed, that the top age limit for the Army will nominally be reduced to 35. The word "nominally" is used because the threat of draft may still be held over the heads of older men as a club to keep them on the job, eliminate absences from work, or induce them to shift to more important work.

Refrigeration service men have been listed as "essential workers" by the War Manpower Commission in a memorandum to Selective Service Boards. However, nothing is being done to discourage *recruiting* of these men by war plants or the armed forces.

Navy opposition has so far held up the long-awaited order to halt enlistments in the armed forces, but good Washington sources still insist that the order will come eventually.

MOVES BEING TAKEN BY MANPOWER COMMISSION

Conversations with War Manpower Commission sources indicate that the following moves are being pushed by that body, with considerable hope of success:

(1) The WMC (or some new superbody in the Rosenman tradition) should be given authority to make an over-all allocation of all manpower.

(2) Women should be registered for work, and those able to work be given jobs either in war work or essential civilian industries.

(3) Employers might be forced to use more colored labor, more older men, more handicapped men, more women—possibly by a quota system.

(4) Both the army and warplant managers might be permitted to obtain their men only through the WMC and the United States Employment Service.

(5) The WMC should be given control of college training.

(6) The WMC might be given legislative authority to move men from non-essential into essential work. (This is stoutly opposed by the unions.)

'MANNING' TABLES WILL BE PREPARED BY EMPLOYERS

Soon all factories engaged on war work will be asked to draw up "manning tables," which will classify all their employes in the order of relative difficulty of replacement. These tables will then be made available to draft boards, who are to be guided accordingly.

In this connection, age becomes a factor, along with the length of time estimated to train a replacement. It will become extremely difficult to prove that men under 25 cannot be replaced. Dependency will become less and less important as a reason for deferment. Higher dependency allowances will probably then become necessary.

The WMC now has 12 regional offices, in each of which is a representative of the Federal Employment Service, a man who is in touch with training programs for industrial employes. These regional men are instructed to go into plants with representatives of labor and management in an attempt to discover labor hoarding and secure the release of men whose work could be upgraded to advantage elsewhere. There is no compulsion in this procedure—yet.

Disinclination on the part of the President to go along with a compulsory Labor Service law, along with the vigorous opposition of the unions, will probably delay such a law for a little while.

LABOR DRAFT MAY BE AVERTED BY MATERIAL LIMITATIONS

Some people, who are inclined to doubt the statistics of the USES and the WPB on the number of workers who will have to be recruited during 1943, feel a "labor draft" may be delayed indefinitely. They base this belief on the theory that materials supply limits have already been reached, which will automatically make it unnecessary to hire large additional numbers of workers.

That condition obtains, incidentally, in Detroit. Although various Washington dignitaries continue to announce that Detroit is an area of "labor shortage," and that hundreds of thousands more workers will have to be added to the payrolls within the coming year, local authorities insist that labor is still available in Detroit, and that the reserve of untapped-but-willing womanpower is tremendous.

Statistics on which Washington claims of a "labor shortage" are based are now badly out-of-date because of recently developed industrial methods which greatly increase output-per-man over previous estimates—plus the now-known limits of materials supply.

They'll Do It Every Time

By Jimmy Hatlo

GOOD NIGHT, EVERYBODY. WE'VE HAD A LOVELY TIME. GOOD NIGHT. GOOD NIGHT!
AW, COME ON. THE NIGHT'S JUST A PUP. ALL OF YOU COME OUT TO OUR HOUSE AND EFFIE WILL COOK YOU UP A FLOCK OF HAMBURGERS.
CLUB WAHOO
LITTLE EFFIE DOESN'T SEEM TO BE OVERWHELMED WITH JOY ABOUT THIS DEAL, HEY!
YEH - SHE SAID GOOD NIGHT - PERIOD. BUT THAT GUY MUST BE A LITTLE HARD OF HEARING.
SURE - SURE. COME YE ONE. COME YE ALL. YOU'LL BE AS WELCOME AS THE CHAPERONES ON A HIGH-SCHOOL HAY-RIDE.
NO PARKING
9-22
SOME GUYS WILL NEVER LEARN. THEY'LL DO IT EVERY TIME.
Thanx to HOWARD TALLERDAY, SAN FRANCISCO.
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LETTERS

SERVICE ENGINEER TELLS OF MANPOWER SHORTAGE

Schuld Refrigeration Service
12201 Revere Ave.
Cleveland, Ohio

Editor:

I attended the meeting at Cincinnati, Ohio that had the title, "Save, Simplify and Substitute." This is one of the finest slogans that could be thought of at this time and even in peace time. There is one thing though, that must be made clear to the service industry, and that is to follow this slogan to the letter. We must have more manpower, which is as scarce as the material which we use.

A few examples to explain further are, when a compressor is repaired on the job it requires more time than to change it. The same for motors, expansion valves, controls, etc. Every day we pass up service calls that cannot be taken due to shortage of manpower. The service industry must know whether the job we are doing is essential to the war effort or whether we are just another trade that can be done away with.

The men connected with this business feel that they are not part of war work and threaten to quit and go into a shop that turns out bullets, guns, etc. We employers don't know where we stand.

In the drafting of our men, there will not be any civilian refrigeration service men left to carry on the necessary work to keep meats and other foods from spoiling. When the Government rationed tires we were notified in advance, sugar the same, and gasoline now coming up, but no advance notice on our men in this important industry.

We are not a bunch of quitters and want to continue serving the public as we have in the past, but if the shortage of manpower continues then we will have to close up with the rest of the small business.

If in another industry a group of men could not get what they thought they needed, all they do is go out on a strike, but we just carry on the best we know how because we know that we have a patriotic duty to perform.

Now if we knew men to be deferred, working in this industry (some of them all their lives), we employers would know where we stand and would hire men in the ages out of the draft or married men, with children, if they are deferred.

We cannot break in a man one month and have him taken away the next. We cannot afford this. I have trained all the men that I ever employed, and it takes a good three years of hard work to get to be good service men on all makes of compressors.

The situation today is taking a job, of any size, and not being able to do it for lack of help.

I believe, by this time, the War Production Board ought to have some idea whether this business is essential or whether it is just another business. If we employers, of independent companies, don't have some information regarding this problem, we are going to be forced to close our doors for the duration. This of course would not help the public or the morale of our small merchants, who are also buying bonds and stamps, some of them more than 10% of their earnings.

I am sure this is on every refrigeration service man's mind to see if we can get some information regarding our standing. Then we can sit down and talk this over with the few employes we have left, and go to work to do a good job without the worry of being frozen out of the business altogether.

Remember, it's the morale of the people that wins wars, so let's keep them in good spirit and we will all dig in and help the good old U.S.A., and we will have this over much sooner than we expect.

GEORGE J. SCHULD

DEALER WANTS COPY OF SAMPLE RENTAL AGREEMENT

Waugh Bros.
421 Jefferson St.
Burlington, Iowa

Editor:

Would you be so kind as to send us the issue of AIR CONDITIONING & REFRIGERATION NEWS that had the rental plan on used refrigerators in it? We seem to have lost our copy and would like the information on renting used refrigerators. If you don't have an extra copy, could you send us a copy of the form shown in the NEWS.

We think the NEWS the best trade paper we receive from an information standpoint.

WAUGH BROS.

Answer: On page 2 of the August 10 Bulletin issue of AIR CONDITIONING & REFRIGERATION NEWS is an article about renting refrigerators and a sample rental agreement, which we believe is the material to which you refer.

Cars Must Be Definitely Converted For Certificate of War Necessity, Rules ODT

Officials Also Ask Owners To Prove Need of Using Property-Carrying Vehicles In Their Occupations

WASHINGTON, D. C.—Owners of passenger cars are not eligible for Certificates of War Necessity unless "the vehicle has undergone a genuine structural change, reasonably permanent in nature, which makes it likely that property, rather than passengers, will be carried," the Office of Defense Transportation has declared.

Moreover, the owner must establish the fact that his business or occupation requires the use of a property-carrying vehicle, rather than a passenger carrying one, in order to qualify fully for a Certificate.

DEFINITE CHANGES

"Merely painting the windows of a vehicle, or removing seat cushions, or removing a door, or attaching a towing device to the axle of the vehicle, does not make it a commercial vehicle," John L. Rogers, Director of the Division of Motor Transport, said.

"Many passenger car owners are converting their vehicles in the mistaken belief that they will be eligible for a Certificate of War Necessity, and thus receive more gasoline, and a better grade of tires," Mr. Rogers said.

Mr. Rogers made it clear that "if the vehicle is merely converted for the purpose of getting more gasoline, or for the purpose of avoiding turning in idle tires under OPA regulations, and there is no bona fide transportation of property intended," the application for a Certificate will be denied by the ODT.

ELIGIBLE FOR 'C' BOOKS

Many of the persons attempting such conversions may be eligible for "C" ration coupon books, Mr. Rogers pointed out. In such instances there would be no advantage in obtaining a Certificate of War Necessity.

"Some people also are converting their passenger vehicles in the mistaken belief that they may be in a better position to secure tires and recap service," Mr. Rogers said. "These person also are misinformed. Mere possession of a Certificate of War Necessity is no guarantee that an operator of a commercial motor vehicle will be given tires."

Commercial motor vehicle operators in addition to having a valid Certificate of War Necessity, must be in one of the eligible classes in the Office of Price Administration's Tire Rationing Regulations to be eligible for tires or recap service.

"Most vehicles that would be converted by a salesman, or for the purpose of light delivery, are not eligible for tires as commercial vehicles," Mr. Rogers stated.

CHECKED IN FIELD

Applications for Certificates for converted passenger cars are being returned to the ODT field office for special examination before issuance of Certificates for such vehicles.

For the information of those interested, the following types of passenger cars, used for transporting property, may be eligible for "C" mileage under OPA Gasoline Rationing Regulation:

(1) Passenger automobiles used for the transportation of mail on behalf of the United States Government.

(2) Passenger automobiles used for the delivery, other than delivery to the reader, of newspapers (not including magazines).

(3) Passenger automobiles used for transportation of non-portable equipment used in making newsreels for dissemination of information to the public, by a person regularly engaged making newsreels.

FARM AUTOMOBILES

(4) Passenger automobiles used by a farmer for transportation of farm products and necessary supplies between a farm and wholesale or retail establishment, a public market, a shipping point or another farm.

(5) Passenger automobiles used by an engineer, architect, technician, construction worker, or repair or maintenance man for transporting materials or equipment necessary to perform construction, highway maintenance or repair, or structural or mechanical installation, maintenance or repair, the extermination of vermin, or the exploration, discovery or exploitation of minerals or other natural resources.

New Autos Barred To Buyers Who Disposed Of Adequate Cars

WASHINGTON, D. C.—New automobile purchase certificates will not be granted to applicants who since Jan. 1, 1942 have disposed of cars adequate for their needs, the OPA has announced.

This is unless circumstances were justified at the time the car was disposed of. Test of the adequacy of the cars will be the same as it would be if they were currently owned by the applicant.

This change in the New Passenger Automobile Rationing Regulations was made by Amendment No. 15, effective Sept. 3.

The same amendment also makes a number of other technical revisions, as follows:

1. Unrestricted sale of new cars by inductees into the armed forces of the United States will be permitted hereafter only when it becomes certain that the seller actually will enter the service. Previously, an inductee with a 1942 model car could sell it, even to a buyer who could not qualify for a certificate under the rationing regulations, as soon as he received notice to report for induction. If he was rejected on final physical examination and had sold his car meanwhile, he would have done so under a dispensation intended only for those who actually enter the service.

2. Hereafter, members of the armed forces who acquire new automobiles after they have entered the service will be permitted to transfer them subsequently only to certificate holders or to members of their own families. Before this change was made, they could sell to anyone without restriction.

3. When a business changes hands, new passenger automobiles that are a part of the bulk assets may be transferred along with the other assets, without certificate, if they are for use in operation of the business and were principally used in the same service by the former owner. Heretofore, when a business was sold or even changed its form of organization (from a corporation to a partnership, for instance) it was necessary for the new owner to get a rationing certificate for transfer of any new cars among the assets.

Gas Rationing For Trucks Delayed Until Dec. 1

WASHINGTON, D. C.—Effective date of the Office of Defense Transportation's mileage rationing program for commercial motor vehicles has been postponed from Nov. 15 to Dec. 1.

Joseph B. Eastman, Director of Defense Transportation, pointed out that the 15-day postponement will correlate the ODT program with the Office of Price Administration's mileage rationing program for private passenger automobiles, the start of which has been postponed from Nov. 22 to Dec. 1.

Postponement of the ODT program also will give commercial motor vehicle operators who have not yet submitted their application for Certificates of War Necessity another chance to obtain their Certificates before nation-wide mileage rationing is begun.

After Dec. 1 no commercial motor vehicle subject to General Order ODT No. 21 will be permitted to operate unless it carries a Certificate of War Necessity issued by the ODT.

This does not mean that an operator can wait until a few days before Dec. 1 to submit his application and expect to receive a Certificate before the deadline, ODT officials said.

Several days are required to process the Certificates and get them back to the operators. In the event an application is not properly filled out or the wrong application is submitted, more time will be needed.

For these reasons, operators who do not submit their applications immediately will have no assurance that their Certificates will be received in time.

Postponement of the Certificates of War Necessity deadline does not change the period in which the tires of all commercial motor vehicles must be inspected, ODT officials emphasized.

These inspections may be made any time after Nov. 15 and must be completed before Jan. 15. Following the initial inspection, the tires of every truck, bus, taxicab or other motor vehicle must be taken in for inspetcion every 5,000 miles or 60 days, whichever is completed first.

After such inspection, no commercial motor vehicle will be permitted to operate unless the official tire inspector has certified that all possible and necessary repairs, replacements or adjustments to assure maximum conservation of tires have been made.

Standing Guard Over the Nation's Health

● Just as definitely as though you were in one of Uncle Sam's uniforms you men who service refrigeration equipment have a job of vital importance to our country's welfare.

It is largely up to you whether the food-saving, health-protecting refrigeration equipment now in existence carries on its all-important work for the duration. It is your skill, your resourcefulness, your determination that can make it last!

Penn stands ready to help you in this job. Penn controls are engineered and built for long-lasting service. Often a skillful repair job or minor replacement will restore a Penn control for years of usefulness. We will co-operate with you to the fullest extent possible in making such repairs. When controls cannot be made to function we can supply new ones under established priority rules. *Penn Electric Switch Co., Goshen, Indiana.*

PENN CONTROLS

REFRIGERATION AIR CONDITIONING ENGINE HEATING PUMPING AND AIR COMPRESSOR

SERVING THE NATION with honor

It's the SECOND *greatest flag in the world!*

"Old Glory", as ever, comes first—highest on American flagstaffs—highest in American hearts.

Since the attack on Pearl Harbor, and a demand for war equipment such as our country has never known before, the Army-Navy "E" Award Flag has become America's *second* best-beloved banner.

The men and women of Brunner have EARNED *this coveted honor.* They have earned it the hard way—with a spirit of willing cooperation, the work of craftsmen and a devotion to the simple principles of tolerance which have been called "The American Way of Life."

Each Brunner employee takes a quiet pride in his or her award certificate and "E" pin. They NOW look forward confidently to the day when their Award banner will show its first "Service Star"—for continued high achievement in the production of vital war material in the same efficient manner as they had been turning out peacetime equipment for thirty-five years.

This is *their* Award—but they haven't time to take the bow for themselves.

They're much too busy—*serving their Nation with honor.*

AIR COMPRESSORS AND BRUNNER COMMERCIAL REFRIGERATION

BRUNNER MANUFACTURING COMPANY, UTICA, NEW YORK, U. S. A.

Alex Holcombe Gives Thorough Analysis of Refrigeration Parts Problem

Jobbers Association Head Summarizes Problems Faced by Industry in Getting Repair Parts; Shortages Are Studied

By Alex Holcombe*

Everyone within sound of my voice is familiar with refrigeration and is anxious to do his part to solve the problems which face us all. You have just listened to a very capable presentation of the two most important problems of the refrigeration service engineer.

We cannot help much to solve the first or manpower problem. In the second of these problems, namely replacement parts, however, we are very much involved. Ours is the responsibility of providing a near-by source of supply of these replacement parts for our customers, the refrigeration service engineers.

We too have our problems and they are very closely allied to the two just mentioned. We very definitely have the problem of manpower, and I might add womanpower because many of the jobbers have for years utilized the services of women in our businesses.

Unfortunately we have more than two important problems. The first has already been mentioned, the second is our dealings with our customers, the refrigeration service engineers.

The third covers replacement of items which we sell, including our dealings with those who manufacture the refrigeration supplies.

A fourth very definite problem is the handling of priority and other types of information which must be secured from our customer, sorted over and checked for accuracy, assembled in permanent record form for examination by government officials if necessary, placing this information on orders or consulting the various restrictions which have been placed on our doing business.

This is a good place to inject a thought which will show the complexity of the priority records required by us. The Washington representative of a Rema member two weeks ago assembled one copy of each of the orders and amendments affecting the refrigeration business. There were 84 of these and it cost $2.49 to mail them to his home office. That means 83 ounces or 5 pounds and 3 ounces for just one copy of each order affecting our business.

This is one of the things we are up against which does not usually come to everyone's attention. Perhaps that is the reason why refrigeration has not received the proper recognition due it in Washington. But we certainly must be important or 84 orders would not be necessary to keep us in line.

*Address of President of National Refrigeration Supply Jobbers Association at All-Industry Meeting in Chicago.

Problems Facing Jobbers In Filling Orders

The previous speaker refers to a certain lack of uniform practice among the jobbers on the handling of their orders. I quote the speaker "some jobbers require a rating on nearly everything, even articles in stock, which did not have to be ordered from the manufacturer." I cannot speak, of course, for any quantity of the jobbers but I cannot believe that they require a rating from the service men unless a rating is required by their source of supply.

I am wondering if the key is not in the words "even articles in stock." Whether or not an item is in stock has nothing to do with the priority required as such articles must be replaced or the jobber is selling himself out of business. Ratings cannot be given by the service man on certain items as no provision has been made for them.

BREAKING LAW

If a jobber insists on ratings on this type of material he is guilty of breaking the law and also demanding that his customer do the same thing. Provision has been made on the PD-1X forms by the Distributors Branch of the WPB to secure ratings for items which are not rated by the service men. Considerable effort was made by this Distributors Branch to contact and instruct the jobbers in the use of these forms.

It is hardly worthwhile for a jobber to ask for ratings on such items as gaskets even though ratings can be applied. Most gasket purchases are for only a few at a time and the cost of keeping these records would be too great.

The question has come up again about copper tubing. This is very definitely restricted by the Copper Branch of the WPB which has control of all of this metal. There are many more vital uses for copper in these times than the making of copper tubing and fittings.

COPPER SITUATION

As far back as a year ago I was told in the Copper Branch that there was not sufficient copper or brass material in this country to make the ammunition and actual fighting material alone. Since the time that statement was made, I believe a way has been found to make some of the larger shell casings from steel instead of brass which has lessened the dire shortage of copper.

Do you realize that the American Telephone & Telegraph Co., which includes all the Bell Telephone companies, cannot secure even one pound of copper unless they prove conclusively that it is essential toward the winning of the war?

The question has been raised many times by the service men as to why we do not completely fill their rated orders. It should be quite apparent that there is a shortage existing on many important refrigeration supplies. Every jobber could sell his entire stock in a few weeks. Then who would supply future requirements?

In many cases the orders we receive are for greater quantities of an item than could possibly be considered "an emergency service inventory" as stated in P-126. If each of you will carefully read this order you will find the emphasis on these two words **"emergency service."**

The order was not intended to allow anyone to stock up for weeks or even months in advance of the actual requirements. Permission is not given to assign ratings under this order if you already have some of the same material in stock. Another angle which has appeared is the ordering of material which could not possibly be considered repair or maintenance material.

Will you list some time the quantity of these items which you need for repairs—brass line shut-off valves, brass compressor shut-off valves, brass flare fittings, copper sweat fittings, and steel tubing? Much of this material which has been sold has been installed in violation of P-126.

The question has even been brought up about selling condensing units for breakdown. Is it possible that many of these units have broken down so badly that they cannot be repaired? Usually the motor or the condenser, or even the compressor itself needs replacing, seldom does the entire unit break down and need replacing.

Analysis of Parts Requiring Priority

Recently I had occasion to make a list of the major items required for repair and maintenance of existing refrigerating systems and I was amazed at the difficulty we are having in securing some of these items even with AA ratings. In not a few cases we cannot secure delivery in less than 30 days on the AA-1 rating.

Among the important classes of material requiring ratings are expansion valves, compressor seals, household thermostats, commercial controls, dryers and strainers, gaskets and replacement compressors. Among the strictly repair items the following need no ratings at the present time: refrigerants, belts, oils, drying agents and some compressor parts. Let us examine each of these classifications in some detail.

EXPANSION VALVES

Expansion valves may be divided into two classes, automatic and thermostatic. There is also a capillary type of expansion unit. This capillary tubing is not available at the present time. All refrigerators using these must be converted if that is possible, or else shut down for the lack of this small part.

One manufacturer of expansion valves has stopped production entirely although he still repairs the few valves of his that are still in guarantee. Another manufacturer, well known for his automatic valves, has not been able to ship any of these for five months. Another is unable to secure body forgings except for his non-adjustable type of valves. These of course are not suitable to many types of installations.

Still another has his entire capacity filled up with AA rated orders and still cannot fill these within a reasonable time. Another will not take orders for the one ton or less expansion valves without an A-1-k or better rating. This eliminates his valve from the repair and maintenance field. Only one manufacturer still fills orders for A-8 and A-10, although for a considerable time he was running 30 to 40 days for shipment. This was probably caused by difficulty in securing raw materials. It is going to work a hardship on those distributors who do not have this one make of valve because it is the only one which can be shipped at present on repair and maintenance ratings. Will this improve by spring?

COMPRESSOR SEALS

The compressor seal problem is a serious one, because the seal is one of the common repair items which must be available for almost all makes of compressors or the machines shut down.

This year in the middle of the past season it was announced that Rotary Seal would cease production. A quick survey was made of the jobbers' shelf stocks. One hundred twenty-five jobbers reported over 100,000 seals in stock and the ratio of 3 commercial to 2 domestic.

With this information the WPB furnished a high enough rating to the manufacturer to start production again. There are still only a few types available. Apparently because of the shortage of steel, all Norge Rotary Seals have been off the market for six months. It is questionable how many different types will be available for next summer when the demand will certainly be greater than it is today.

Another manufacturer has been planning to produce seals for replacement but so far very few have been shipped. The bellows type of seal will only be available as long as the present stocks last. The copper alloy from which this bellows type of seal is made is not available to the refrigeration trade any longer and no substitute metal has been found.

THERMOSTATS

In the manufacture of thermostats for household refrigerators there have been four makes available to the general trade. Three out of these four have stopped production entirely and are not even repairing them. The one remaining manufacturer has probably made more thermostats than all the others combined. Because of the difficulty of securing raw material he has required a progressively higher priority now. An A-1-k rating will secure thermostats in from 30 to 60 days. Many of the jobbers have been entirely out of all domestic thermostats for weeks at a time.

COMMERCIAL CONTROLS

Several of the manufacturers of commercial controls require an A-1-k or better rating. One or two will fill orders with A-8 or A-10 ratings in 30 to 40 days. Since all controls have essentially the same metals used in their manufacture, it is difficult to see why one manufacturer is restricted to A-1-k or better while another can fill A-10 orders.

Most commercial controls can be repaired satisfactorily. Some of the manufacturers require an A-1-k rating for repair parts, which of course is not available from the service men. Factory repairs require a month or more which probably accounts for the sale of many new controls. The service men simply cannot wait that long.

DRYERS AND STRAINERS

Dryers and strainers also present a difficult problem. Some time ago the manufacturers changed from copper or brass to steel shells and were shipping on A-3 to A-10 rated orders. Gradually we are finding that we cannot replace them because the ratings are not high enough to enable the manufacturer to secure his material.

Never were the stocks of dryers and strainers as low as they are today. Sizes larger than ⅝-inch O.D. cannot be secured on A-1-a to A-1-k ratings in less than 60 to 90 days. Some of the angle type in these sizes cannot be secured in 30 days on less than AA-1 rating. When the jobber finds that he has sold material on A-3 to A-10 ratings and then cannot replace it without an A-1 rating, he naturally tries to reserve at least a reasonable shelf stock.

Many dryer orders are for 6 to 24 pieces per customer and in a very short time the shelf stock will be entirely gone. About a month ago we were told that Silica Gel would not be available and this of course slowed up the production of dryers. It has since been made available in fair quantities. Very recently a letter was received from the Chemicals Division of the WPB stating that Activated Alumina was not to be available for the refrigeration trade. Here again we will probably run into a delay in the production of dryers because of this.

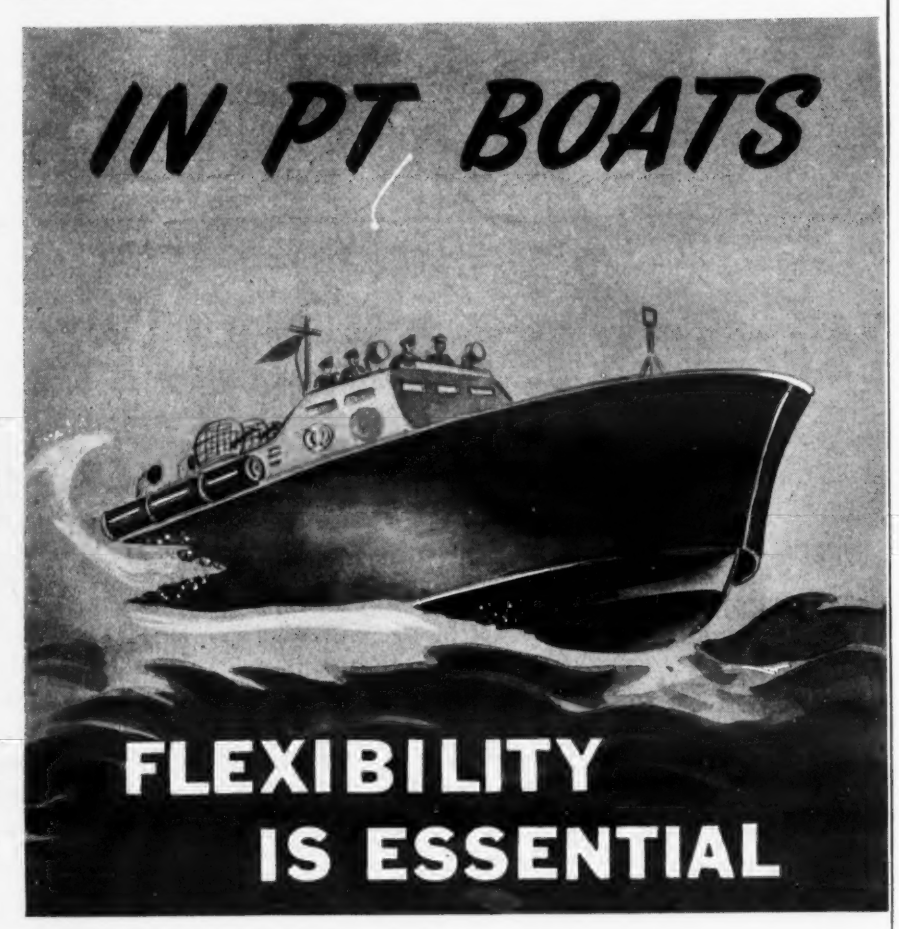
Many of the dryers which have been produced in the past cannot be satisfactorily refilled even in a good repair shop. They were not constructed with this in view.

GASKETS

One of the items which we sell which is seldom profitable is gaskets. The usual sale is one each of two or more sizes or types of gaskets. Even though we sell these at list price there is so much time involved that it is almost never profitable. It would certainly be impractical to list the individual ratings on gaskets.

Of course, only commercial gaskets would be entitled to ratings. Our only other source of help would be the Distributors Branch of WPB

(Concluded on Page 17, Column 1)

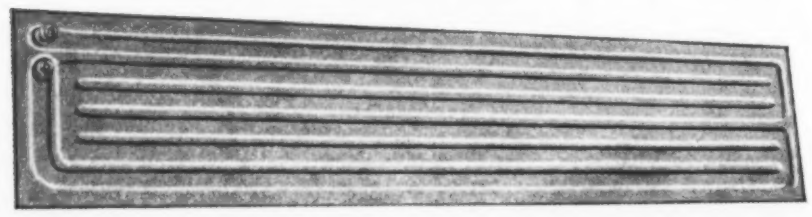


In Cold Plates it's important, too!

● This flexibility is the reason for the rapidly growing demand for STANGARD Prime Surface Cold Plates. High refrigerating efficiency *(higher than any other type of plate because of it's* **prime surface***) . . . great structural strength, light weight, ease of installation, and low cost, are but a few of the reasons why STANGARD Prime Surface Cold Plates are continually specified for—

LOCKER PLANTS • DISPLAY CASES • FOOD COUNTERS
SODA FOUNTAINS • TRUCKS • LIQUID COOLERS
BLOOD PLASMA CABINETS • ICE CREAM CABINETS
FARM MILK COOLERS • FARM FREEZE CABINETS
FROSTED FOOD REFRIGERATORS
BEVERAGE COOLERS • RIVET CHILLERS
LOW TEMPERATURE TEST ROOMS

* *No intermediate factor between refrigerant and contact surface.*



STANGARD-DICKERSON CORP.
46-76 OLIVER STREET NEWARK, NEW JERSEY

Holcombe Summarizes Parts Problem of Industry and Cites Need for Refrigeration To Civilians Who Are Producing War Goods

(Concluded from Page 16, Column 5)

which will assign an A-8 or better rating to 500, 1,000, or more gaskets, not giving the individual part numbers. The manufacturers must have a rating in order to secure raw material.

COMPRESSORS AND PARTS

Replacement compressors and parts from the various manufacturers are increasingly difficult to secure. One manufacturer of fractional horsepower compressors which have distribution by most of the jobbers can only furnish new compressors on A-1 ratings and none at all on A-8 or A-10. Recently it took us 60 days to get a compressor of this make for the Naval Aircraft Factory at the Philadelphia Navy Yard on an AA-1 rating.

All of the manufacturers are insisting on ratings on their orders. The delivery on plates, reeds, and seals is quite slow and certainly will not be satisfactory in the warm weather when most of the shutdowns occur. Some of the manufacturers are still insisting on the return of old parts which adds to the difficulty in handling the orders.

TOOLS

It is quite true that not many new tools will be required for service and maintenance. Flaring and cutting tools cannot be secured on ratings lower than A-1-k and even then they are very slow. This is brought about by the unusual demand by our armed forces for these. It is practically impossible to get adjustable wrenches without an AA-1 rating.

Recently some of the manufacturers have advised that the A-10 rating cannot be used to secure tools. This means that only licensed service agencies will be able to buy replacement tools. It is most important that everyone take care of their tools and particularly to see that they are not stolen or lost.

SUPPLIES WITHOUT RATINGS

Having carefully examined the items requiring ratings let us look at the others which are available at the present time without ratings. So far there have been enough refrigerants to take care of all requirements, but unless cylinders are returned promptly there will be a shortage as soon as the demand picks up in the warm months. Deliveries by both railroad and truck are going to be slower which means that cylinders will be out for a greater period of time.

On belts, we will have to stock a little heavier in the common sizes. There are far too many sizes required at the present time. There will probably be sufficient oil but we will have to fill our customers containers or use glass bottles. The container problem also comes up in connection with the drying agents. I am quite sure that the service man will keep these containers clean and use them over again if the problem is pointed out to them.

Small amounts of tubing will be required for repair and maintenance. Copper tubing now requires an AA-5 or better rating so that any new copper tubing will not be available. Steel tubing which has been used fairly successfully as a substitute is very difficult to secure on A-3 ratings. In fact steel is almost as critical as copper and it is doubtful if much new steel tubing will be made after the present stocks are used up.

Plastic tubing unfortunately has not proven satisfactory for most refrigeration installations. It softens at temperatures higher than 140° and below freezing is quite brittle.

Small amounts of copper sweat fittings are required for use with steel tubing which is now on hand. Future requirements of these fittings require AA-5 rating which eliminates them from repair and maintenance. Before long certain copper fittings will be quite scarce in many areas because of this.

Brass fittings have not been manufactured since June of this year without an A-1-k or better rating. Fortunately there were large stocks on hand but many of the unusual but needed items are disappearing rapidly from the market. Unfortunately, in many cases, these are also required for AA-5 or better rated installations and we are having difficulty getting them in a reasonable length of time. Manufacturers of certain types of fittings such as sweat to flare only available in brass, should plan to produce reasonable quantities of these for such high rated orders.

From these facts you can readily see that the shortage of most of the repair and maintenance items is very great. Refrigeration equipment simply cannot be repaired without the use of certain items. It is not possible to patch systems with substitute materials. We are dealing with high pressures using some cases toxic refrigerants. It is wasteful to continue to charge a system in which the leaks cannot be repaired.

Refrigeration Necessary For Today's Diet

Refrigeration for the preservation of perishable foods is probably the use which touches most of us daily. Our distribution system of these perishable foods is built on the use of refrigeration.

Probably the most essential item is milk which cannot be distributed at all without its use. The farmer must cool the milk and then it must be stored at temperatures not available with spring water or the bacteria count will increase so that it will not pass the state inspection. It has been indicated that dried milk will be available if necessary but it is questionable if this can be done in the short time before the hot summer months. It is also questionable whether sufficient machinery is available to do this.

The same arguments applying to milk apply to any other foodstuff to a more or less degree. It is not necessary to describe in detail the method of distribution of vegetables, meats, butter and other perishables. You and I eat these foods daily. The proper diet of fresh foods probably contributes as much as anything to keep us a healthy nation.

GOOD FOOD ESSENTIAL

Good food is essential to good work. If you and I are not in first class condition because the food we eat does not contain the proper vitamins or perhaps contains too great a bacteria count, we may go to work but we certainly cannot produce as well as we do when we are in good physical condition. We might even have an epidemic of sickness or disease or both because large numbers of people have eaten food which tasted all right but which had decayed to the point that it was not safe for consumption.

We all hear about communities with too few doctors and some are without any at all. Can we afford in these critical times to allow the possibility of such epidemics? We cannot afford it from the standpoint of its effect on production if for no other reason.

Refrigeration also touches hospitals which are considerably understaffed. It is needless to say that they should have facilities to secure repair and maintenance material if such material is available nearby from a jobber's shelf or from a service man's car. You cannot hold up an operation until the manufacturer builds the control which is necessary to keep the equipment running. All of our health protecting agencies will be overloaded and they cannot deal with any great increase in sickness.

COMPARED WITH ARMY

I wish to quote an article which I cut from the **Philadelphia Inquirer** this past Monday, Nov. 16. "In War Medicine, published by the American Medical Association, Dr. James A. Tobey, New York, lieutenant colonel Sanitary Corps Reserve, United States Army, after pointing out that poor food has been responsible for the collapse of armies and civilian populations from early history, states: 'The soldier who is adequately nourished is invariably the best fighting man'." Does this not also apply to those of us who produce the material which our soldiers use?

Refrigeration is needed most in the spring and summer months when fresh foods replace canned and preserved foods carried over from the previous year. The farmer is going to have difficulty to find manpower to harvest the huge crops required to feed our boys scattered all over the world, to feed our allies and last of all to feed us who supply them from this vast arsenal of democracy.

When a harvest of vegetables is ready it must be picked, distributed, processed, or stored under refrigeration at once. Unless this material is consumed immediately or canned it is refrigerated by all sizes and types of equipment. If one or more of these distribution channels fails it puts a greater load on all of the other already overloaded facilities.

Orders for War Plant Jobs Tax Jobbers

It is true that at the present time many of us are busy filling orders required for actual production of war materials. However, we are much more dependent on the service men and dealers who are our customers in normal times. Naturally each of us will do the best we can to fill their reasonable requirements. Many of them have been our customers for many years and are personal friends of ours.

On the other hand, some of us are beginning to receive a lot of business from those who have never bought from us before.

Apparently their usual source of supply is unable to furnish them with their requirements. In most cases, they do not like it when we do not honor their orders completely. None of us are able to take on many new accounts because of the difficulty in satisfying our regular trade.

How are we to handle the increased number of telephone calls and records required? Very few service men realize the enormous amount of paper work which their rated orders require us to undertake. Since most of the orders are small, naturally they are more expensive to handle since it requires almost as much time to handle an order for three or four items as it does for one three or four times as large. The only way that we can help the service man is to keep a reasonable stock on our shelves. Our problem is of course to get the manufacturer to ship to us.

We have been told many times by the Air Conditioning and Commercial Refrigeration Section of the WPB that they have been granting AA ratings to manufacturers on the PRP allotments for repair material. May we inquire from our sources of supply why we have difficulty in getting these repair and maintenance materials to fill the service men's orders?

Rated orders are either served on us by our customers, the service men, or we receive ratings from the Distributor's Branch of Industry Operations of the WPB when our stock is too low or when we need them to purchase material which does not carry a rating on our customers' orders, we don't just make up these ratings.

QUOTES SCHELLENBERG

I quote here three paragraphs of the fine speech given by A. B. Schellenberg, president of Alco Valve Co., here in Chicago this past May:

"It would be tragic if, as our Nation's war needs for refrigeration unfold, it should develop that our industry's production, installation and servicing capacity is not sufficient because it has been so completely converted to other fields of war work. Think of the loss of time and money, the waste of experience, knowledge and equipment, if new plants had to be set up, or if wholly foreign companies had to convert to making refrigeration equipment just to supply war needs. If next week all of the low side manufacturers should, by their own individual thinking, decide that their company can best serve the Nation by manufacturing shells or fuses, the effect upon the Nation's war refrigeration needs would be disastrous. If all the refrigeration and installation men took jobs assembling tanks, the effect would be obvious.

"Conversely, it would be equally tragic if we in the industry permitted a large part, or any part of our production capacity and manpower to remain idle when it is so badly needed. It would be a crime if we did not use our full facilities for war production, refrigeration and air conditioning or otherwise. If all of the compressor and condensing unit manufacturers individually decided to hold their machines in idle readiness for hoped for business in their normal refrigeration products, the Nation would suffer a great loss of production capacity.

"How do we reach this happy medium? How do we know what the war refrigeration requirements will be? Who is to tell us how far to go in entering new war material fields? There is frequently so much confusion, and there are so many contradictory opinions—how can we tell what to do?"

The actual amount of material which we require is so few millions of dollars in these days when we talk of so many billions of dollars. It does not seem either sensible or economical to allow hundreds of millions of dollars worth of refrigerating equipment to be shut down with the possible spoilage of millions of dollars worth of perishable goods for the want of these repair and maintenance items.

We jobbers will do our part but unfortunately we are only a distribution channel. We neither use nor do we manufacture. Remember that, it is important. **We neither use nor do we manufacture.** We are essential because there is no other economical way of distributing goods which are required so quickly to prevent spoilage.

If we are not serving our country in the best possible way we would like to know it now so that we can all get out of this business and get in some productive one.

WOLVERINE

REFRIGERATION TUBE

WOLVERINE TUBE DIVISION
OF CALUMET AND HECLA
CONSOLIDATED COPPER COMPANY
1413 Central Ave. • Detroit, Michigan

Dayton
V
BELT
Silent... Vibrationless...
Dayton
V-BELTS
FOR ALL LEADING MAKES OF HOUSEHOLD APPLIANCES
● We urge you to give full support to the government's rubber conservation program. V-Belts are Vital to Victory. So, you will want to see that V-Belts are properly installed with pulleys in correct alignment and with proper tension.
Dayton V Belts
LIFELINES OF POWER
ITAL TO VICTORY
THE WORLD'S LARGEST MANUFACTURER OF V-BELTS
THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO
DAYTON RUBBER EXPORT CORP.
38 Pearl St., New York, N. Y., U. S. A.
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NEW SPECIAL FEATURES PROVIDE BIG, EASY-TO-SELL ADVANTAGES . . . .

Salem Food Storage Plants provide many benefits to operators and their trade. Most outstanding is the fact that customers never enter the refrigerated chamber.

● With the Salem Food Storage System, the refrigerated chamber adjoins the sales room. Customers push a selection button at the refrigerator door, and a tier of lockers automatically comes to them. Thus, when the door is opened, customers have access to their lockers without entering the refrigerated area. Locker patrons are not exposed to cold or obnoxious odors.

Since a rubber flap fits between the lockers and the door jambs, expensive door loss is avoided. In fact, the Salem System has 57% less BTU. loss than the Walk-in types. Many Salem Locker Plants are now operating profitably and with new, low maintenance costs.

SALEM FOOD STORAGE PLANTS ARE NOW AVAILABLE FOR YOU

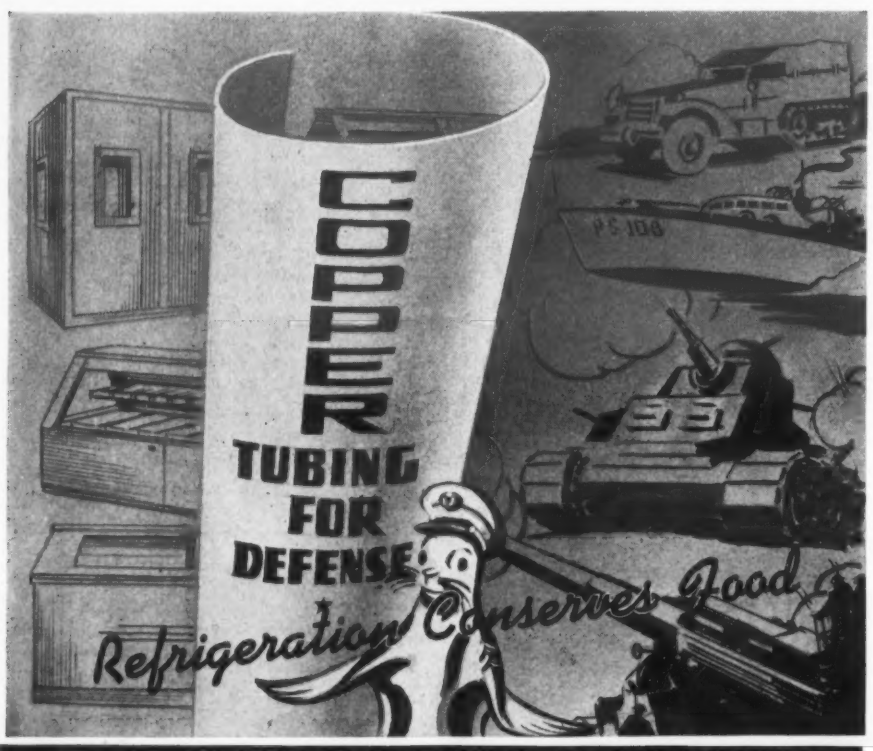
Under the W.P.B. rulings, we can build plants under certain conditions. We recommend that you write today for prices and up-to-the-minute engineering data.

Write Today

Dealers and engineers will find this system more satisfactory to handle than other types. The equipment has many worth-while advantages and the system is advanced in design. Write today for further data.

SALEM ENGINEERING COMPANY
SALEM, OHIO

BUY WAR BONDS



PENN BRASS & COPPER COMPANY, INC.
POWELL AVE. ★ ERIE, PA.
Seamless Brass and Copper Tubing

Servicing the G-E Scotch Yoke Refrigerator Machine

From the General Electric Service Dept. Educational Film of the Same Name

(INSTALLMENT 5: CHECKING CAPACITOR AND WIRING TO FIND TROUBLE)

Editor's Note: The editorial material on these pages is a published version of "Servicing Scotch Yoke Machines," originally presented as a sound slide film produced by the Product Service Division of General Electric's Appliance and Merchandise Department. The material is appearing in instalment form in Air Conditioning & Refrigeration News, by permission of the General Electric Co.

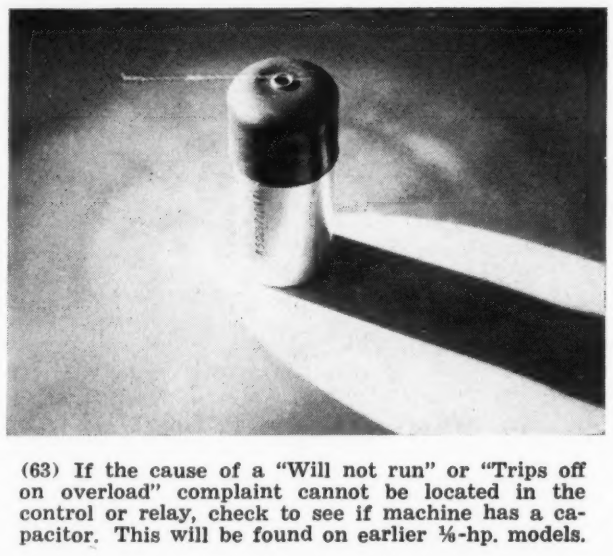
Previous instalments are:

Instalment 1 (Sept 28)—Principles of Machine Operation.

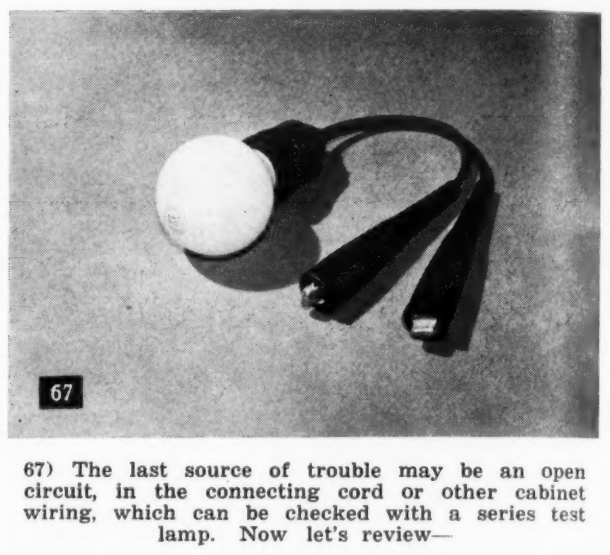
Instalment 2 (Oct. 12)—Operation of the Temperature Control.

Instalment 3 (Oct. 26)—Finding Out Why Sealed Unit Will Not Run.

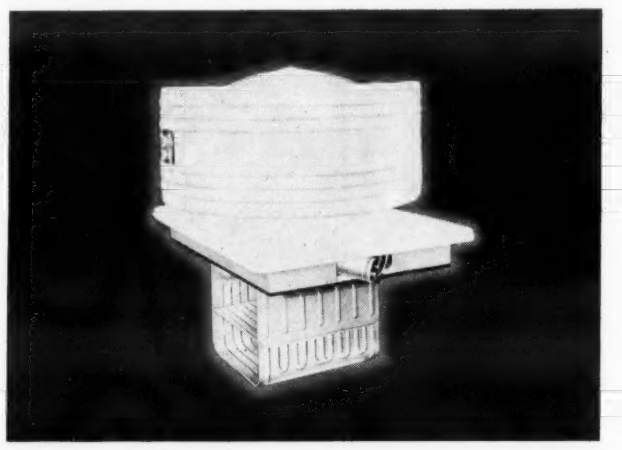
Instalment 4 (Nov. 9)—Checking Temperature Control and Starting Relay.



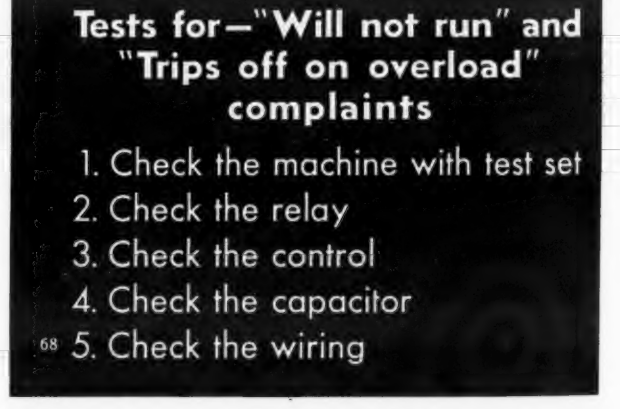
(63) If the cause of a "Will not run" or "Trips off on overload" complaint cannot be located in the control or relay, check to see if machine has a capacitor. This will be found on earlier ⅛-hp. models.



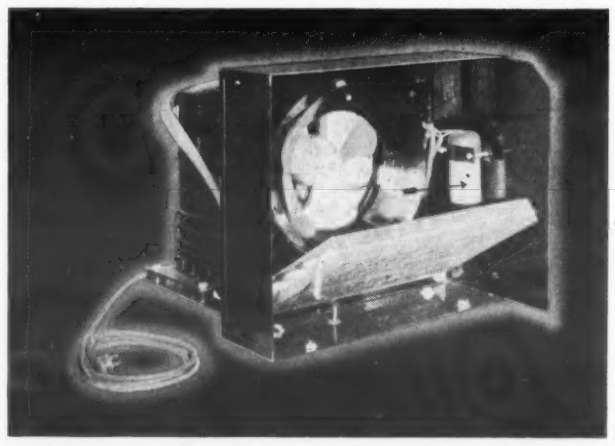
67) The last source of trouble may be an open circuit, in the connecting cord or other cabinet wiring, which can be checked with a series test lamp. Now let's review—



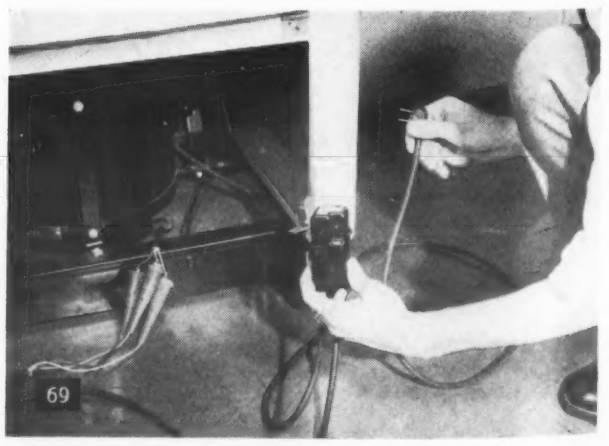
(64) On practically all of the CK-30 and CK-35 Monitor Top machines, the capacitor is located in the box top.


Tests for—"Will not run" and "Trips off on overload" complaints
1. Check the machine with test set
2. Check the relay
3. Check the control
4. Check the capacitor
5. Check the wiring
68

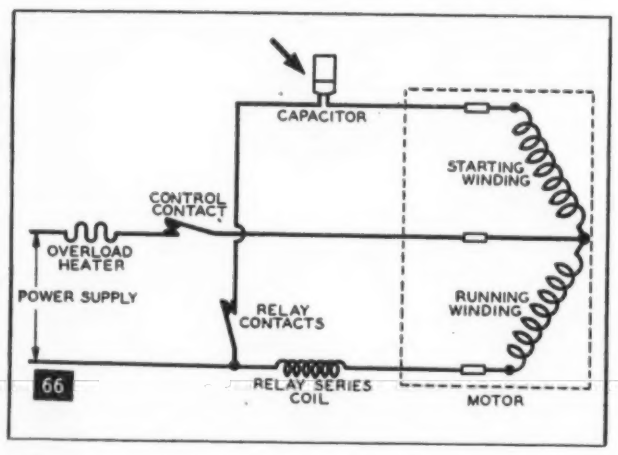
(68) The tests for "Will Not Run" and "Trips Off on Overload" complaints: First—Check the machine with a test set. Second—Check the Relay. Third—Check the Control. Fourth—Check the Capacitor. Fifth—Check the wiring.



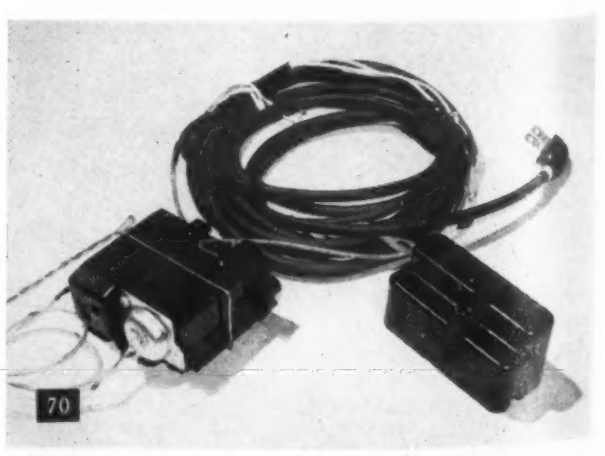
(65) On the early double evaporator CE-34 machines, it is mounted on the condenser housing near the compressor case.



(69) Do not assume that the trouble is in the machine until you have proven it will not run, with test set substituted for the external circuit.



(66) The capacitor is in series with the starting winding of the motor and can be checked by shorting it out of the circuit to see if the machine will run. If it does, replace the capacitor. Remember that you should not leave the machine running without one.



(70) Not all of the possible difficulties will be shown up by checking the relay, control, and wiring as already described. It may be necessary to replace them individually to determine which one is at fault.

Experienced Butcher Helps Locker Patrons With Meat Problems

CHELAN, Wash. — When J. M. Bixby, operator of a 280-unit locker plant installed in John's Meat and Grocery Supermarket here, opened up his new plant, he didn't risk any dissatisfaction or ill-will from locker renters by leaving them to experiment for themselves with the storage of this and that food product. Neither did he leave it up to the customer to figure out for himself just what quantities of meats should be purchased to show a real saving in the use of the locker facilities.

Instead, the first thing he did after the plant was complete and ready for operation last May was to work out a comprehensive "Butchering and Meat Preservation Schedule" by which families of any size can accurately buy, preserve, and use meats, poultry, and produce, and estimating from interviews with typical families the amount of meat consumption each experienced and at what cost.

Having operated a large meat market himself for seven years, Bixby knew approximately how much meat each locker would have to hold for families of three, four, five, six or eight persons, but he made sure by actually testing the amounts and service of the locker on his own family.

"I don't think it's a wise move for the meat market operator to put in a locker plant until he knows everything about its use as an instrument of economy as well as the details of refrigeration and upkeep, etc." he said. "Actually, I might have rented 280 lockers six months ago, but I'd rather be certain there are no miscues in advance."

"It requires careful planning in locker use to prevent the locker from being full at one month and empty the next" Bixby pointed out. "Everybody can benefit from locker facilities if he will schedule meat purchases in proportion with his family consumption and buy far enough ahead to make a saving at the correct time."

Thus, he has made up a meat schedule which covers an average family of five on which 199 of his 280 customers operate, and another covering the rest. This schedule is worked out on a monthly buying basis and reads:

Buying

January—235 lbs. of pork—50 lbs. frozen, 75 lbs. cured for hams and bacon, 40 lbs. rendered to lard.

February—125 lbs. of beef in front quarter, 110 lbs. frozen.

April—225 lbs. of pork—55 lbs. frozen, 55 lbs. cured, and 35 lbs. rendered to lard.

June—75 lbs. of lamb—35 lbs. frozen.

August—150 lbs. veal—85 lbs. frozen.

September—12 to 15 chickens, 30 lbs. frozen.

October—235 lbs. of pork—65 lbs. frozen, 60 lbs. cured, 40 lbs. rendered to lard.

November—125 lbs. hindquarter beef—110 lbs. frozen.

This schedule works out to 530 pounds of frozen meats, 190 pounds cured, and 115 pounds of lard—which over a year's time, is adequate for an active adult family of five, according to Bixby. He has automatic buying arrangements with most of his customers whereby he replaces meats in customer lockers according to the schedule above, billing the customer for the meat at the end of the month. Maximum savings are possible with this system.

Another Bixby feature is limitations on the length of time any meats can be stored in his lockers. No customer is allowed to keep pork or ground meat in the locker more than four months after storage—to prevent dissatisfaction when the meat changes taste and texture from overlong storage.

No poultry can be stored for more than two months without wrapping in a vegetable parchment bag provided by Bixby. Certain cuts which expose tenderer meat surfaces are taboo after six weeks.

His locker plant is located to the right and behind the Super Market meat shop, and has a York diffuser-type chiller in the locker room and sharp-freezer. Both are open to the public and have built up a lot of new customers from interested Chelan residents who come in to see a locker plant for the first time.

Slat-type locker boxes are used throughout, renting for the low rate of $5.00 to $10.25 per year, renters furnishing their own padlocks.

College Furnishes Lockers For Use Of Faculty Members

BATON ROUGE, La.—Frozen food lockers have found their way to the college campus. Here at Louisiana State university faculty members enjoy garden-fresh strawberries or early spring fryers in midwinter by freezing and storing these and other seasonal foods in one of the school's 50 food freezing lockers.

Installed two years ago to take care of faculty members' surplus meats and garden products, the lockers are located in a sub-zero room in the Animal Industry building on the L. S. U. campus.

The process is the same used by large food preserving companies, J. B. Francioni, head of the Animal Industry department, explained. Foods are frozen quickly in their natural fresh state and preserved in the lockers in this condition until ready for use.

Proving the popularity of the lockers, Mr. Francioni said that all are rented and a waiting list of about 60 teachers has been compiled. Most popular foods stored in the lockers are prize strawberries from victory gardens, chickens, meats, fruits, and all types of vegetables.

In addition to operating its own frozen food lockers, the university held its second annual freezer food locker school for three days last month.

Designed to coordinate refrigeration services with the nation's war food needs, the school featured demonstrations and discussions on meat curing and processing fruits and vegetables for freezing. Mr. Francioni reported on the national frozen food association meeting in Kansas City, Mo., while Estelle Fournet, food preservation specialist, demonstrated processing fruits and vegetables for freezing.

28th Locker Plant Opens in Alabama

BIRMINGHAM, Ala. — Alabama's twenty-eighth quick-freeze locker plant has just been completed and is in operation at Boaz, according to Eric Alsobrook, chief of the Marketing Division of the State Department of Agriculture and Industries.

The new plant which will be operated in conjunction with the Boaz Creamery has a cheese storage room, egg storage room, and a locker room with 90 lockers.

100 Locker Plant Underway In Montana Town

ROY, Mont.—A new locker plant is being built here by Jack Fulton and W. C. Buechner, with 100 lockers as a start.

New Locker Plants

NASHVILLE, Ill.—The first locker plant in Washington county has recently been opened here The Food Locker Engineering Co., St. Louis, has the contract, the work being done under the supervision of Frank Maher of that concern.

To interest the public, the management invited the public to view the construction while it was going on.

ERIE, Pa.—The first frozen foods locker in the city, refrigerated with used machines, has been opened by Leonard S. Niederriter, local Frick Co. agent and commercial service dealer. Mr. Niederriter started plans for the new locker when freeze orders curtailed sale of his equipment.

Initial installations include 475 standard lockers, a combination aging and chilling room, a locker room equipped with sharp freezing cabinet, a cutting and wrapping room, and a loading platform.

WATER COOLERS

for

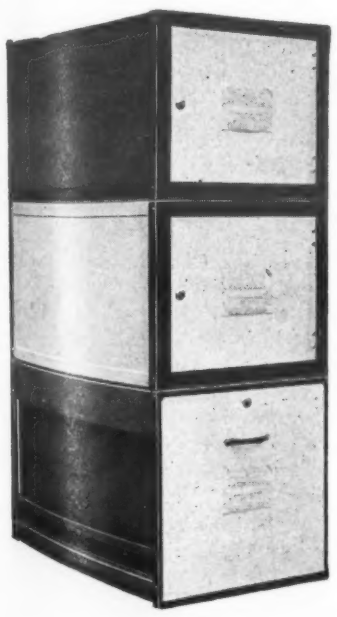
- Ships
- War Industries
- Hospitals
- Photographic
- All Purposes

FILTRINE MFG. CO. 53 LEXINGTON AVE. BROOKLYN, N. Y.

You CAN Get Delivery on the new MASTER FOOD CONSERVATOR

We are prepared to make deliveries so that you can utilize the expansion space you have available.

This New successor to the Locker will maintain your established standard of service. Don't confuse it with substitutes because it is an improvement. You won't be satisfied with any other, once you see this New MASTER FOOD CONSERVATOR.



It matches your present drawers and door fronts—does not absorb odors — is moisture resistant — clean — sanitary — sturdily constructed — easily stacked — shipped knock-down — easy to erect.

Act Now— Don't Wait

Protect yourself by ordering early. Details will be sent promptly on request.

Endorsed by and sold only through distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

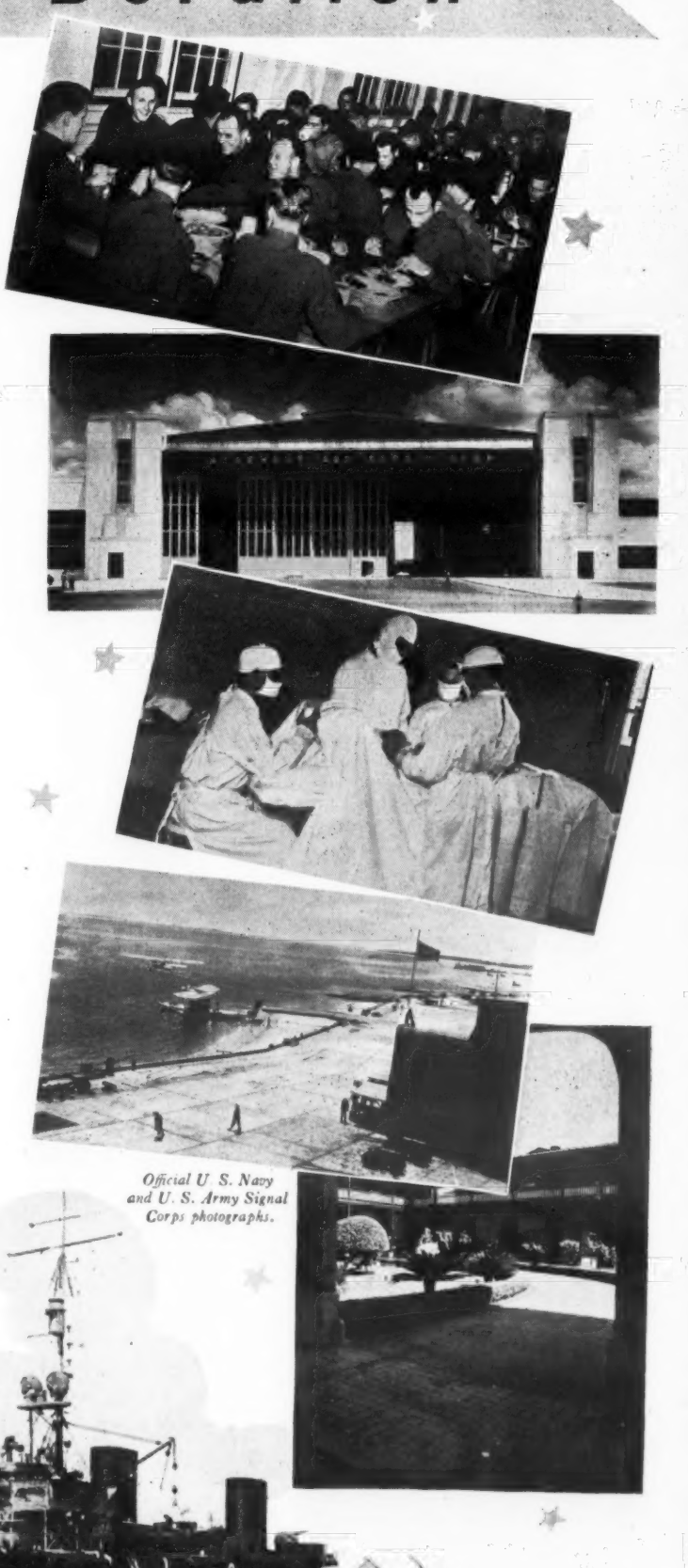
Over 300,000 Masterbuilt Lockers in Use

For the Duration

CURTIS REFRIGERATING EQUIPMENT

Serves Our Armed Forces

- First!



Official U. S. Navy and U. S. Army Signal Corps photographs.

● CURTIS Air Conditioning and Refrigeration Equipment has followed the Armed Forces of the United States on both land and sea, in addition to serving war industries at home. Some of the innumerable applications include hospital operating rooms, blood banks, food preservation, simulating high-altitude, low-temperature conditions for the Air Forces in photographic work; in the production of aircraft engines, propellers, rivets, bomb sights, gauges, medicines, parachutes, synthetic rubber, and many other uses vital to America's War Effort.

We are proud that CURTIS Equipment is serving the war effort in such a wide variety of important applications, just as it has for many years served peace-time industries. We are proud of the background which has made this possible — 88 years of successful manufacturing experience, advanced engineering, precision manufacture, and the use of the finest materials throughout.

All Curtis equipment is designed and built to deliver dependable, trouble-free, economical performance.

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company
1912 Kienlen Ave. St. Louis, Missouri

CURTIS REFRIGERATION AIR CONDITIONING AND COMMERCIAL

R.S.E.S. President Tells Why Draft Deferment For Servicemen Is Necessary

. . . Makes Plea For Repair Personnel To Stick To Your Present Jobs

(Concluded from Page 1, Column 5)

lization have adapted themselves to the consumption of tainted and decayed foodstuffs.

"It is foolish to say that because such peoples apparently get along without refrigeration, that our food distribution and preservation systems could revert to their standards without any ill effects upon our peoples.

"Such conditions imposed upon our people would produce epidemics and suffering that can be avoided with proper refrigeration equipment."

PLESSKOTT'S ADDRESS

E. A. Plesskott, national president of the Refrigeration Service Engineers Society, offered a vivid picture of how the shortage of manpower and parts was making the task of repair and maintenance difficult, and asked greater consideration from draft boards to the determent of skilled refrigeration service men. Said Mr. Plesskott:

"It is simply our tough luck that refrigeration equipment is constructed almost 100% from critical materials, such as steel, copper, brass, aluminum, tin, nickel and rubber; all scarce and badly needed for direct war production."

"We neither expect nor desire that our government shall divert to us a single ounce of critical metal, which, going into the making of a torpedo, for example, will help to blow the bottom out of an enemy cruiser.

"Taking the broad view, the dilemma of the service men has two horns. This is proper, according to nature. Cows have horns, but so do devils, and our dilemma is the latter kind. One of these satanic horns is manpower; the other is replacement parts. Both are caused by war, and while the help which may be given to us can furnish relief, we know well enough that no complete cure for our twin troubles can come with anything short of peace with victory.

"We believe, as an organization, and for the most part as individuals, that refrigeration service engineers can best help to win the war by staying on the job," he continued. "We have imagination, and we can see more than an inch ahead of our noses.

"We can picture, not later than the start of next summer, a more or less complete breakdown of mechanical refrigeration, due to shortage of replacement parts and of trained men for repair and maintenance work. We can paint, before our mind's eye, epidemics of food poisoning, striking down members of our civilian population all over the nation, and to a lesser extent, perhaps, but still in a serious measure, filling the hospitals in the training camps where our young men are learning to become soldiers.

"We think as one with government men in charge of the Refrigeration section in believing that during our present all-out war effort a sharp line must be drawn between what is 'essential' and what is 'convenient.' This is no time for frills.

"Refrigeration and air conditioning for comfort can wait for the day of victory. When I use the word 'refrigeration' I am talking about refrigeration for the preservation of food, in order that our men with guns, and the men behind the men with guns, may continue to have wholesome nourishment. I am talking about refrigeration which is **essential,** and I am not even thinking about anything else.

S. S. BULLETIN NO. 10

"Because I want America to win this war more than I want anything in the world, I am going to put my neck out just a little at this point," the Service Engineers' president continued. "I am going to ask the draft boards of the Selective Service System to consider with care, after reading Occupational Bulletin No. 10 from their own national headquarters, covered in Memorandum I-405 to all state directors — whether a t r a i n e d, experienced refrigeration service engineer can be of greater service in winning the war by being inducted into the army or by staying on the job of refrigeration repair and maintenance which is so essential to the success of our military effort.

"In the work they are now doing, which, as I have endeavored to show, is so vital to victory, our refrigeration service engineers are trained and experienced. You see, when a shop needs a refrigeration service engineer, it is not possible to get one by hanging a 'Help Wanted' sign in the window.

3 YEARS TRAINING

"Three years of careful training, based on natural intelligence and aptitude, are required before a man can be trusted to go out on a job without supervision. It is a highly specialized line of work, and screwdriver mechanics, coming in off the street, cannot take the places of our men who have been inducted and are being inducted into military service. We have yielded up our men to a point where further inroads are certain to cause, within a few months, the breakdown in mechanical refrigeration facilities which I have predicted.

"On this matter, of course, the choice is not ours, any more than this war came to us from our own choice. We must try to make certain, however, that local draft boards throughout the country understand the true situation with reference to refrigeration service engineers. The way to do this which is most direct and most likely to prove effective, is to cause a genuine appreciation at Washington of the seriousness of the situation, and the alternative if we continue to lose trained and experienced refrigeration service engineers at the rate which has been prevalent during the past year.

"We have lost some men, to be sure, who have not gone into military service, but who have gone into war factories. They have been moved to change less by the nice money which almost any man of mechanical turn can now make in the war factories—less by that, I say, than by the regular hours. Under present conditions a refrigeration service engineer is never through for the day, any more than a family doctor.

"He is in many instances doing three men's work. I can understand why they change, and I have no word of criticism for them, of course, so long as they leave to go into factories engaged in direct war production. In such work they are helping to win the war no less certainly than in refrigeration repair and maintenance. I do point out to them, however, that so far as payment for their labor is concerned, they will do well to consider the situation with care before leaving refrigeration work.

PAY GOOD—FUTURE BRIGHT

"A dollar and a half an hour, or thereabouts, for a long day, runs into real money at the end of a week—money which a direct war production job must 'go some' to beat. I say, too: Look ahead to the **end** of the war, when mechanical refrigeration, by all the signs, will offer opportunities for serving your fellow men—and getting rich while so doing—such as even the most optimistic among us do not at present contemplate.

"I have talked at some length on this manpower matter, because it is fast becoming our main headache, promising to surpass even the pain caused us by the replacement parts shortage. The latter, as you know, has been with us for a long time. We were beset with this problem long before Pearl Harbor, and as an uninvited and unwelcome guest under our roof during all these months we have not learned to love him any more than we did when he first came to us.

"The situation with respect to replacement parts has become progressively worse. This, of course, has not surprised us. We know, as men of sense, that if the supply of critical metals in this country is so scant as to threaten the production of direct war equipment and materials, we can expect little in the way of relief right now. It is not in the cards. Two from four leaves two, and four from four leaves nothing. That is good arithemetic, and it applies now, the same as it has from time immemorial.

"Out on the job we have patched up mechanical refrigeration equipment in ways we would not even have considered a year ago. Then we have gone back and patched up the same piece of equipment again. Mechanical refrigeration, all over the country, is becoming a 'Happy Hooligan' of patchwork. Just how much longer we can keep going on this basis I do not know.

"The general breakdown may come before the end of the winter. Certainly present conditions and prospects do not warrant the hope that it can be delayed longer than the start of summer. Meanwhile we shall continue to make the most of what we are allowed by way of replacement parts. We shall do our best to prevent the disaster which threatens.

WANTS UNIFORM PARTS POLICY

"We have been bothered on certain occasions by a lack of understanding and uniform practice among the jobbers, relating to the need for orders to bear priority ratings. The practice of some jobbers was to require a rating on nearly everything, even articles in stock, which did not have to be ordered from the manufacturer.

"The use of PD-1X, 'Distributors' Application for Preference Rating,' is now becoming general among the jobbers, I am glad to say, so that purchases by the service men are somewhat less involved in red tape than was the case during the summer months.

"Lack of clear-cut decisions from the Refrigeration s e c t i o n have puzzled both the jobbers and us. The case of copper tubing is an illustration. Nobody knows even today, so far as I can say, whether copper tubing is a raw material or a fabricated product. I wish that some of these things could be straightened out. We all wish to obey the law and stay out of jail, and we are determined to do whatever is necessary to win the war.

"We understand that WPB Order No. P-126 is being rewritten, and we all hope, of course, for more satisfactory ratings on replacement parts. Personally, I do not expect them. This may be due to the fact that the refrigeration industry has not made a sufficiently strong impression in Washington, in the endeavor to show that we are essential to the war effort, or it may be due to the fact that when war production requirements are met, nothing is left for us.

LICENSING COMPLICATED

"The matter of license certificates under P-126 is something which has caused much grief and confusion among our members. Many of them have not received licenses. They claim to have made application in proper form—that is, they have qualified themselves as the agent of a manufacturer to receive the PD-399 application form, and have then filled out and submitted their applications with care.

"Still, the license certificates do not come through. My own opinion is that the method of obtaining a certificate is too involved. We are refrigeration service engineers, not lawyers. Making application for an application is a little too much for some of the boys to figure out. We shall be glad to join the other groups in seeking a revision calling for a single application, and placed with the jobbers in sufficient quantity.

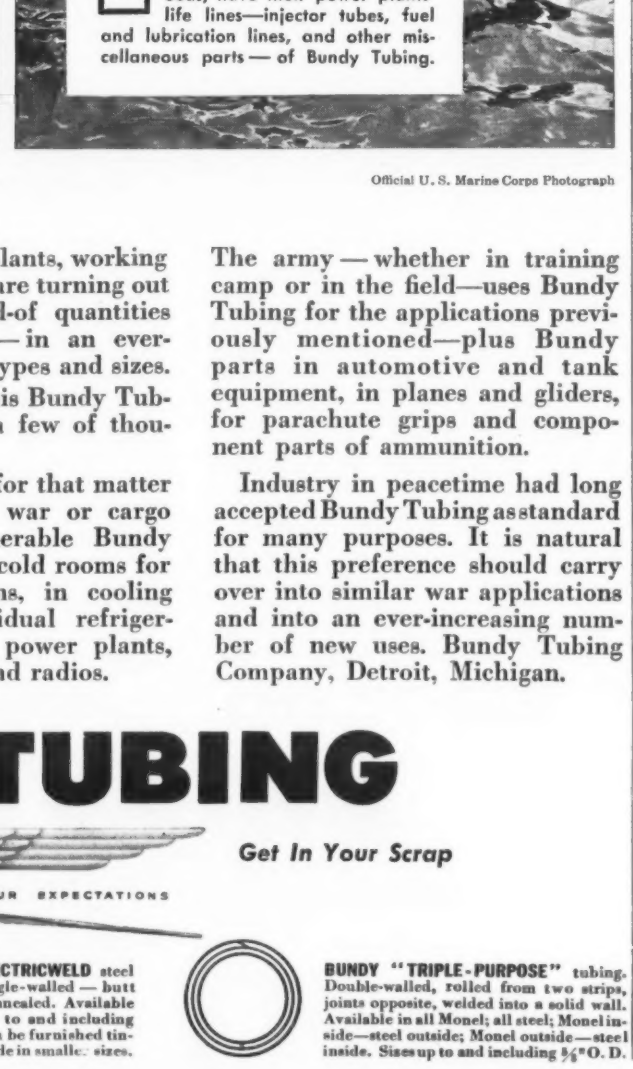
"The application should contain such questions as: (1) Do you devote full time to refrigeration service work? (2) How long have you been established? (3) What is your investment in specialized refrigeration service equipment and tools? (4) What is your investment in refrigeration parts? (5) Do you serve a

(Concluded from Page 21, Column 1)

FAMOUS LIFE LINES

1 **AUSTRALIAN CONVOYS,** life lines of our South Pacific communications, are moving undisclosed quantities of war material and reinforcements to our troops and allies down under. Here is a gun crew on a transport at its daily job of testing its anti-aircraft protection.

Official U. S. Navy Photograph



2 **HIGGINS BOATS,** like this, famed for Marine Corps landing operations in the South Seas, have their power plants' life lines—injector tubes, fuel and lubrication lines, and other miscellaneous parts — of Bundy Tubing.

Official U. S. Marine Corps Photograph

RIP CORD GRIPS

Rip cord grips for parachutes, life lines of safety for American airmen, are one of the important new wartime uses which are taking thousands of feet of Bundy Tubing.

EXPANDED Bundy plants, working round the clock, are turning out hitherto undreamed-of quantities of Bundy Tubing — in an ever-growing variety of types and sizes.

Where does all this Bundy Tubing go? Here are a few of thousands of war uses:

A battleship (or for that matter any other type of war or cargo vessel) has innumerable Bundy Tubing parts in its cold rooms for food and munitions, in cooling systems and individual refrigerators, in auxiliary power plants, in surgical lamps and radios.

The army — whether in training camp or in the field—uses Bundy Tubing for the applications previously mentioned—plus Bundy parts in automotive and tank equipment, in planes and gliders, for parachute grips and component parts of ammunition.

Industry in peacetime had long accepted Bundy Tubing as standard for many purposes. It is natural that this preference should carry over into similar war applications and into an ever-increasing number of new uses. Bundy Tubing Company, Detroit, Michigan.

BUNDY TUBING

Buy U. S. War Bonds — *Get In Your Scrap*

ENGINEERED TO YOUR EXPECTATIONS

BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including $\frac{1}{4}$" O. D. This double-walled type is also available in steel, tin-coated on the outside, and in Monel.

BUNDY ELECTRICWELD steel tubing. Single-walled — butt welded — annealed. Available in sizes up to and including 2" O. D. Can be furnished tin-coated outside in smaller sizes.

BUNDY "TRIPLE-PURPOSE" tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel; all steel; Monel inside—steel outside; Monel outside—steel inside. Sizes up to and including $\frac{5}{16}$" O. D.

HEAT INTERCHANGERS

- *— Large Surge Capacity*
- *— High Heat Hold*
- *— Sweat & Flare Fittings*
- *— Low Cost*

KRAMER TRENTON Co.
Heat Transfer Products
TRENTON, N. J.

Product Groups Make Reports On Availability of Supplies

(Concluded from Page 20, Column 5)

sufficient number of customers in your community to give you standing as a public servant?

"The Refrigeration section could investigate the claims made in such an application with a minimum of difficulty, and could then issue a license certificate promptly, which would hold good so long as the applicant remained in compliance. Under the present system there is great injustice. Some janitors and part time workers, who should never be allowed certificates, have nevertheless received them. Other established, full time service men, who certainly deserve certificates, have not received them. I ask the members of the other groups to help work out something along the lines I have suggested.

Product Reports

Heat Transfer Group

Declaring that "information received from such surveys as have been available are inadequate, particularly from the standpoint of the dollar volume and amounts of materials in terms of pounds used," L. C. Pellegrini of Marlo Coil Co. declared that at the group meeting of the heat transfer equipment manufacturers a course of action was decided upon as follows:

1. All manufacturers to be surveyed via a questionnaire asking an estimate on essential materials needed to meet requirements for products to be used next year for repair and maintenance purposes.
2. That records of orders in the past year that carried a priority be referred to in obtaining a basis for the estimate.
3. That a report be made to WPB of such manufacturers as **did not** answer the questionnaire.

In reply to a question from the floor, Mr. Pellegrini declared that scrap from old heat exchanger equipment should not be returned to the manufacturer for refabrication (1) because the government had ordered that it be returned through regular scrap channels; the material must be melted down and turned into sheets or bars, etc., at mills properly equipped for such work.

Condensing Units

"Consensus among the condensing unit manufacturers that attended the group meeting was that they can furnish nearly all compressor parts—including compressor bodies—on an A-10 rating under P-100, or on the rating as established for emergency repairs under P-126," declared B. J. Scholl of Brunner Mfg. Co., in reporting for that group.

"It is unnecessary to apply a PD-1A for any replacement part," Mr. Scholl said.

One of the reasons why compressor repair parts are readily available on priority ratings as low as A-10 is that manufacturers, regardless of the rulings under which they receive orders for repairs, are now entitled to apply an "AA" rating in their PRP applications for materials.

One warning against the misuse of the P-126 order was sounded by Mr. Scholl, who said that those who have been violating the order in the manner thus described face serious penalties.

Mr. Scholl described the situation in which a violation is likely to occur as follows:

When a new condensing unit is installed on a job under an emergency replacement order to prevent the breakdown of a vital refrigeration system, the installing refrigeration contractor cannot take the defective system, repair it, and sell it to anyone.

Rather, he must keep such a unit and use it for other emergency replacements. Failure to do so is a direct violation of the order, and WPB is taking cognizance of such violations, Mr. Scholl declared.

Plans were made at the group meeting, said the Brunner executive, for a questionnaire to go to condensing unit manufacturers.

In answer to a question from the floor, Mr. Scholl stated that bellows-type compressor seals are difficult to supply because the material used in the seal nose is very critical.

Refrigeration Controls

"It is difficult to supply controls for refrigeration systems today except on very highly rated orders," report A. B. Newton of Minneapolis-Honeywell Regulator Co., speaking for the pressure and temperature control makers.

"Many control parts demand materials that are under the control of the 'M' or Conservation orders, such as power elements, that require copper blowing bellows, and parts that contain stainless steel," Mr. Newton explained.

It will is necessary to get higher ratings for repair and replacement purposes in order to ship many control items for such purposes, it was stated.

"Controls for commercial systems are in a somewhat better position than those for household systems," said Mr. Newton, who described the situation on household controls as "just about impossible."

A questioner fro the floor inquired: "Why don't all the control manufacturers ship on the same priorities? Don't they all use the double A rating now available to producers to use to apply for raw materials needed to make repair parts?"

Several manufacturers chimed in on a reply to this, the essence of the reply being:

The "joker" in the "AA" rating permitted to be assigned such applications for repair parts' raw materials is that under PRP (and probably also under CMP) there is no guarantee that the amounts of materials requested will be granted—in fact, most assignments of materials give the producer about a 50% cut in the amount requested.

Then the manufacturer, under the overall governing priorities regulation, must fill all his higher rated orders first, and then fill whatever of the lower rated orders he can with what is left.

Thus it often happens that a manufacturer with a lot of high rated orders cannot fill the same amount of lower rated orders as another producer who doesn't have such a volume of the higher rated orders.

Flow Control Valves

This theme was further developed by H. F. Spoehrer of Spoehrer-Lange Co., speaking for the manufacturers of flow control valves.

"Manufacturers of expansion valves and solenoid valves are in the position of selling different items on different ratings," Mr. Spoehrer stated.

"The inventories held by the individual companies are often big factors in what the various companies can do with respect to shipping finished products.

"On products requiring materials which are under the 'M' or Conservation orders, the question is whether or not the manufacturers' inventories are in the raw state or whether they are semi-fabricated.

"Inventories of raw materials are generally frozen by the 'M' orders, but material which is fabricated in some form often is not.

"Also, manufacturers are hard put to fill lower-rated orders when the top rated Army-Navy orders are dumped in their laps in a big volume, and naturally take precedence over everything else."

Mr. Spoehrer declared that the Controlled Materials Plan was still too new and in need of too much interpretation to determine whether or not it would be any more advantageous to the refrigeration industry than previous plans have been.

When the industry gets ready to submit figures to Washington which will estimate requirements for materials for repair and maintenance needs, Mr. Spoehrer suggested that two sets of figures be submitted:

(1) The total for the entire industry.

(2) The requirements for each product group, submitted by the individual product groups.

Purpose of this method of presenting such figures is to be sure that the finished products will balance out, so that there will be none of the "for want of a nail the shoe was lost, and for want of a shoe the kingdom" sort of thing.

Valves and Fittings

C. H. Benson, Imperial Brass Mfg. Co., speaking for the valve, fittings, and accessories group, declared that the WPB will probably submit a list of valves, fittings, and accessories that it will still permit to be manufactured. Probably only standard items will be produced.

Mr. Benson warned that for the present "end use" is still required on all items containing copper and copper base alloys, and steel.

Water Cooler Group

R. O. White of Day & Night Mfg. Co., reporting for the beverage and water cooler product group, said that many of the problems of this group were tied in with other product groups—such as controls.

Lowsides for water coolers can often be repaired without the use of new materials, said Mr. White. Where copper is used in the lowsides, there is a considerable problem in the obtaining of copper for such repairs.

Tubing and Piping

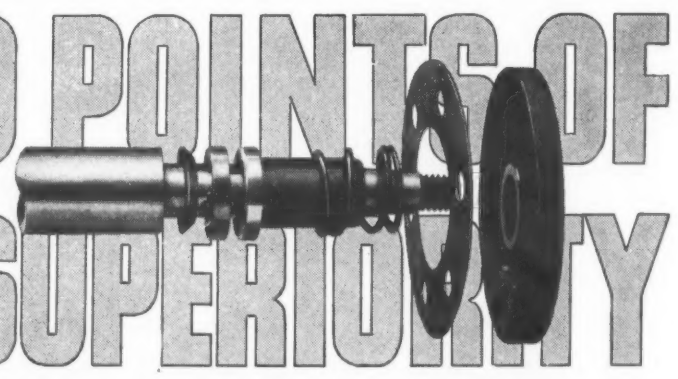
George Allen of Mueller Brass Co., while not the representative of the refrigeration tubing and piping group, was asked to make a report for this group.

Order M-9-a now restricts the sale of copper tubing to orders bearing a rating of AA-5, Mr. Allen declared.

Steel tubing is not even available on AA-5 orders, it was stated.

Mr. Allen again explained the situation as regards inventories of raw materials of copper and copper-bearing alloys, pointing out that raw materials which were in stock prior to Feb. 28 are frozen, but that stocks secured after Feb. 28 can be fabricated, because such stocks are presumed to have been obtained on priorities high enough to permit their fabrication.

9 POINTS OF SUPERIORITY



1. **TRIPLE PROTECTION**—Chicago Seals provide triple seal protection against leakage—by forming a perfect seal at both the front and rear of the compressor shaft.
2. **SELF ADJUSTING SLEEVE-LOCK**—its rugged construction assures trouble-free life.
3. **FLEXIBLE IN USE**—Chicago Seals work perfectly on both scored and bent shafts, as well as slotted shafts.
4. **SELF-ALIGNING**—Chicago Seals are self-aligning.
5. **DESIGNED** for extra life.
6. **POSITIVELY CANNOT SLIP**—Chicago Seals will not slip. The precision-built compensating friction ring is fitted against the shoulder of the shaft, locking the seal securely in place.
7. **REPLACEABLE PARTS**—Chicago Seal parts are all replaceable—providing corresponding economies in both replacement and operation.
8. **EASY TO INSTALL**—Chicago Seals are easily and quickly installed.
9. **CHICAGO SEALS** are better seals.

Chicago Seals

Refrigeration Engineers Are the Conservators of the Nation's Food Supply

CHICAGO SEAL CO. 20 North Wacker Drive CHICAGO, ILLINOIS

there's a WAR to be won!

AND CONSERVATION OF MATERIALS

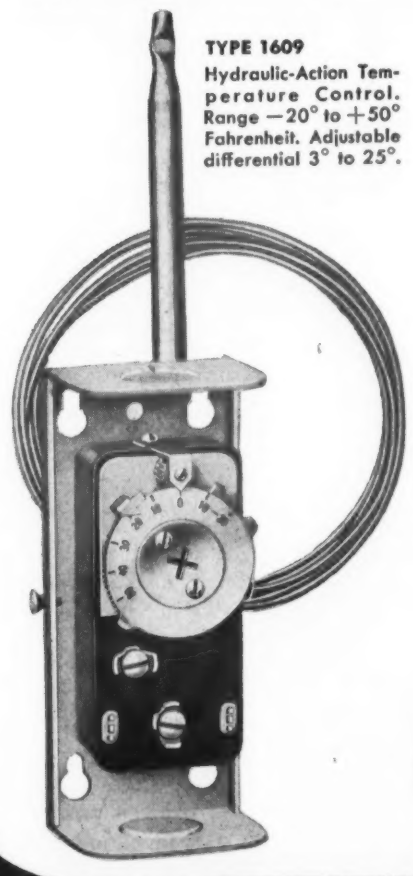
AND MANPOWER IS ESSENTIAL

★

Perhaps you can't get everything you need today . . . or tomorrow either. Neither can we.

TYPE 1531
Low-side Pressure Control. Range, 25 inches of vacuum to 50 lbs.—adjustable differential, 5 to 35 lbs.

But that's part of the job of winning a war . . . and while it lasts we'll all make the best of our time and the quantity of materials we are able to procure.



TYPE 1609
Hydraulic-Action Temperature Control. Range −20° to +50° Fahrenheit. Adjustable differential 3° to 25°.

Today . . . when you can get priorities and allocations . . . you'll save more man-power by letting White-Rodgers' clearly calibrated dials eliminate guesswork and repeated gauge-testing . . . by letting their accurate performance reduce service calls . . . and by using their flexible mounting facilities to conserve installation time.

★

HYDRAULIC ACTION CONTROL

WHITE-RODGERS ELECTRIC CO.

1211c CASS AVENUE • SAINT LOUIS, MISSOURI

Controls For Heating ★ Refrigeration ★ Air-Conditioning

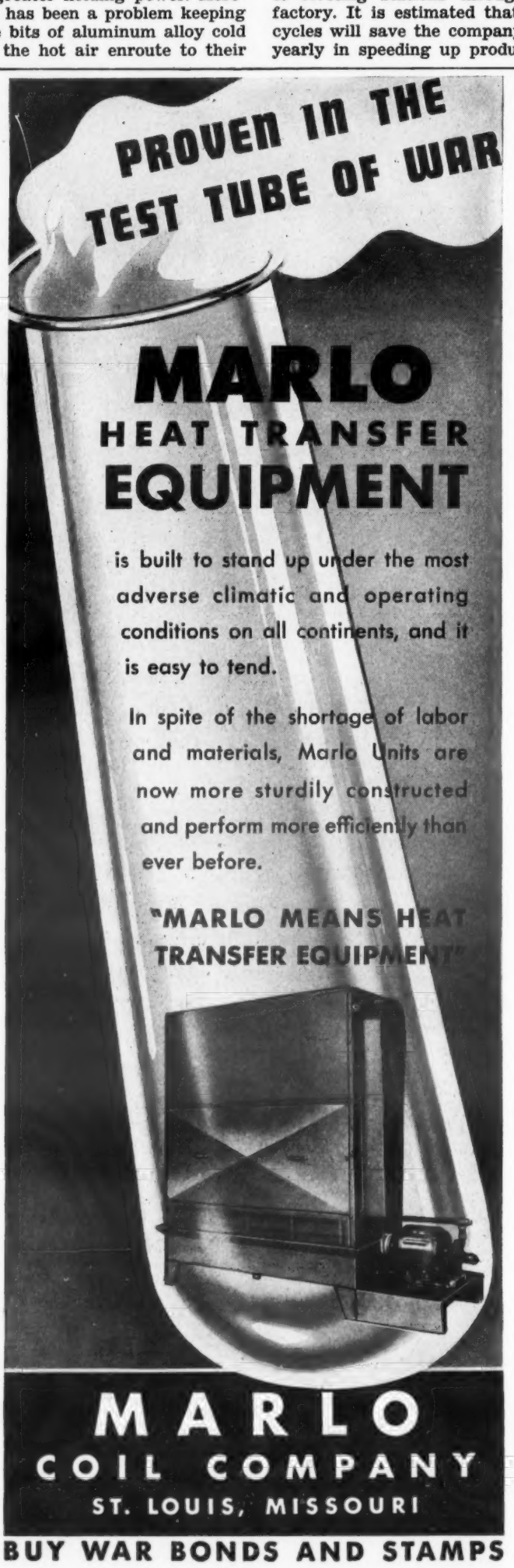
Ice Cold Rivet Delivery

This is one of the four tricycles used to distribute cold rivets at the Grant Consolidated Aircraft plant. Dry ice is used to keep the rivets cold.

SAN DIEGO, Calif.—The Consolidated Aircraft Corp. has gone in for tricycle ice-cream wagons—but for frozen rivets instead of ice-cream. Four of these Good Humor "contraptions" have been purchased by the company to whisk about the company's mammoth factory and dish out cold pellets for riveters.

Cold rivets, after they are driven home, thaw out, expand, and thus have a greater holding power. Heretofore it has been a problem keeping the little bits of aluminum alloy cold through the hot air enroute to their destinations from the refrigerator. The tricycles do the trick.

Pedaled by four girls, the rolling "ice-boxes" carry a top load of 45 pounds of rivets each at a speed of up to 10 miles an hour with heavy pumping. The rivets are bagged like salted peanuts in four hundred assorted sizes, and every day the tricycles make two hundred flying trips from the main storage refrigerators to riveting stations throughout the factory. It is estimated that the tricycles will save the company $50,000 yearly in speeding up production.


PROVEN IN THE
TEST TUBE OF WAR
MARLO
HEAT TRANSFER
EQUIPMENT
is built to stand up under the most adverse climatic and operating conditions on all continents, and it is easy to tend.
In spite of the shortage of labor and materials, Marlo Units are now more sturdily constructed and perform more efficiently than ever before.
"MARLO MEANS HEAT TRANSFER EQUIPMENT"
MARLO
COIL COMPANY
ST. LOUIS, MISSOURI
BUY WAR BONDS AND STAMPS

Tenney Chamber Used For Testing Controls At 'High Altitudes'

MONTCLAIR, N. J.—Tenney Engineering, Inc. has recently issued a bulletin describing its "Tenneyzphere" high altitude chamber and other laboratory equipment for controlling temperatures, humidities and pressures. The installations described are standard jobs, but Tenney Engineering is equipped to make special units built to specifications to provide temperatures ranging from—90° F. to 320° F., and relative humidities up to 95%.

SUB-ZERO TEMPERATURE

The Tenneyzphere high altitude chamber is built to withstand atmospheric pressure and is insulated to obtain and maintain sub-zero temperatures. Ample provision is made for electrical connections to the apparatus under test, as well as for the introduction of air and water pipes, thermocouple wires, rotating shafts for making mechanical adjustment of the apparatus, stainless steel shaft for introducing rotary power, etc. The number of such openings, their sizes and locations, are adjusted to meet the customer's needs. A window, made of multiple plate glass sections to provide insulation and sealed to prevent interior condensation is built into the door. Other windows can be provided on the side walls.

In the standard unit pressure can be controlled from atmospheric to that equivalent to 50,000 feet of altitude. Rate of pressure change is governed solely by the size of the vacuum pump employed, which is a direct-connected, motor-driven, dry, rotary pump, integrally mounted on the unit. It runs continuously during the chamber's operation and pressure is indicated on a 6-inch vacuum gauge.

EVAPORATE 'FREON'

Refrigeration is obtained by the evaporation of "Freon" refrigerant in suitable blast coils or by the circulation of an organic solvent precooled with dry ice, the choice depending upon the use to which the cabinet is to be put. That is, mechanical refrigeration is recommended when the unit is to be kept at low temperatures for long periods of time, when test conditions require frequent raising or lowering of temperatures, or where the plant is isolated.

Standard range of temperatures provided in the unit runs from—40° to 150° F. but the range can be changed to suit special requirements. Heating is accomplished by electric air-heaters mounted in a recirculated air stream.

Desired humidity is produced by spraying a small amount of water into the air stream.

Tolerances on Propellers Controlled by Machining Gears at 20° Temperature

ST. LOUIS — Delicate tolerances for airplane "pitch gears" — small circular gears in the hub of the fighting-plane propeller which change the power of the propeller similar to shifting gears in an automobile—are insured at a local airplane manufacturing plant by refrigerating gear blanks to 20° F., and machining them at that temperature.

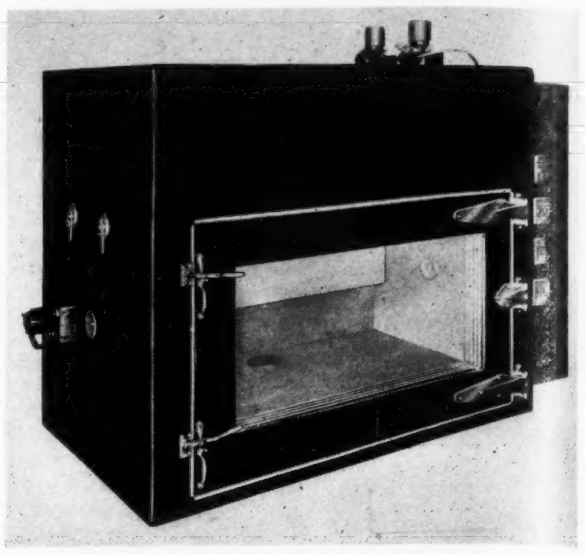
This prevents high heat in machining gear teeth, and there are few "rejects" from the plant. The gears are cut, machined and finished at the 20° temperature, then slowly brought to room temperature.

Motor Products Profit $284,290 for Quarter

DETROIT — Net profit of Motor Products Corp. for the September quarter (the company's fiscal year ends June 30) totaled $284,290 after charges including $50,000 inventory loss and $1,095,000 provision for United States and Canadian income and excess profits taxes. This profit is equal to 57 cents each on 391,254 common shares.

For a similar period last year the net profit was $200,696, or 51 cents a share, after $116,000 Federal taxes.

Low Temperature Test Cabinet



American Coils, Inc., has developed this chamber for testing instruments under extremes of cold and heat. The glass front makes it possible to study the parts during the test.

NEWARK, N. J.—New chamber for testing instruments under extremes of cold and heat is now being manufactured by the American Coils, Inc. It includes apparatus for mechanical refrigerating and electrical heating.

Its range of operating temperatures extends from —55° C. to 70° C.

The cabinet is known as Model RTC-1, and consists of a two-stage condensing unit, heat exchanger, liquid sub-cooler, coil or evaporator, expansion valves, cabinet and forced draft strip heater, along with thermostats and other controls and connections for each.

The entire operation of the Model

PANEL BOARD CONTROL

RTC-1 is completely controlled from a front panel board, where the master switch is located along wtih the off-fan control, light switch and receptable switch.

It can reproduce whatever temperature is desired between the two temperatures given above, and it can maintain the temperature at any level so that the actual service conditions may be created. In addition to providing temperature uniformity, the RTC-1 assures positive air circulation.

Refrigeration is rapid, and the cabinet without production load should reach —50° C. in approximately one hour. The compressor maintains the refrigerant temperature in the coil and is controlled solely by a pressure switch. The coil in turn cools the chamber by means of recirculation of the air within the cabinet. The coil is located above a divider partition upon which are located the fans and dampers controlling the quantity of air passing over the coil.

The electrical hookup is such that when the master switch is in the refrigeration position, the heater circuit is automatically disconnected. When the master switch is in neutral or in heater position, the coil is automatically pumped dry of refrigerant. To do this, a solenoid valve is located in the liquid line. A hand operated valve is located in the same line to be used under special conditions.

OBSERVATION OF TESTS

Observation of instruments being tested is provided by an inner passage of moisture. The inner glass is Tuf-flex tempered plated glass. The visible opening is 46 inches wide by 21½ inches high. These five thicknesses of glass form part of the steel-framed door which has a clear opening of 51½ inches wide by 26½ inches high.

The all steel cabinet occupies space 83 inches wide by 56½ inches high by 42 inches deep. The usable interior is 59 inches by 28 inches high by 30 inches deep, with an interior cubic content of 28.7 cubic feet. The cabinet contains 6 inches of fiberglas insulation.

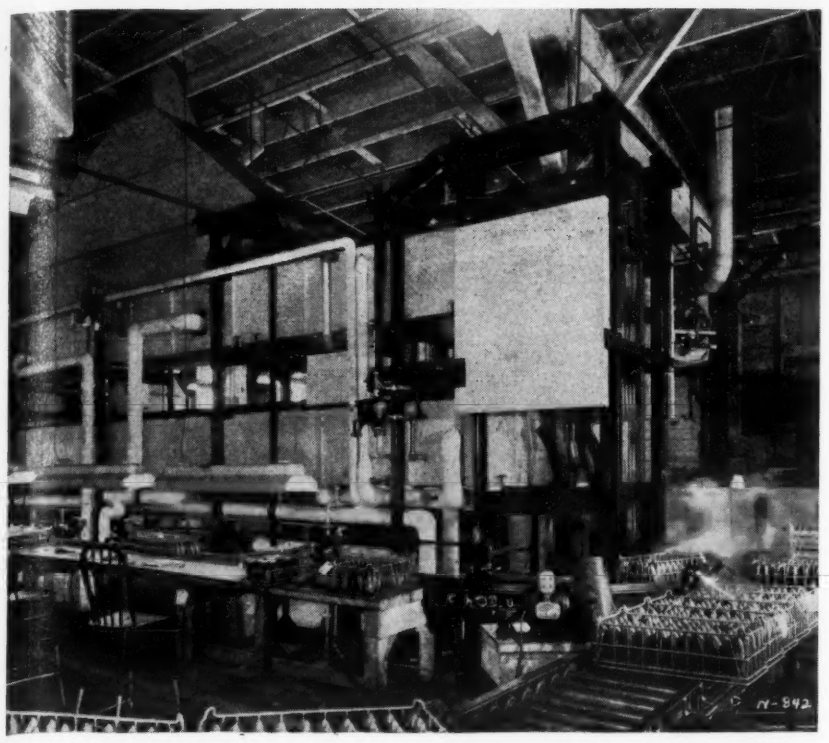
WE'VE CHANGED OUR TRADE MARK

Figuratively speaking we have changed our trade mark. The Chieftain head, that represented the condensing units and compressors we manufacture before Pearl Harbor, still appears on these units, but they are now being built exclusively for our war plants and armed forces. The above design could very well be our trade mark today for it shows graphically that Chieftain has "joined up" for the duration and is now working 100% on war work.

TECUMSEH PRODUCTS CO. TECUMSEH, MICHIGAN

Chieftain

Refrigeration Used to Check Shot For Defects in Shock Test



This is the equipment used in an ordnance plant for "shock testing" armor piercing shot. The conveyor system carries the shot through the three water tests where it is first cooled to 40° F., then heated to 212° F. and recooled to 40°. Results are shown below.

* * *

BLOOMFIELD, N. J.—Shot-testing equipment to "shock test" 37-mm. shot before examination by the Ordnance inspectors has been designed and built by the Conditioned Air Equipment Co. of Minneapolis for a midwestern ordnance plant.

The shot is armor piercing, and if any strain, stresses, or defects are in the shot, the shock test cracks them open and the shot is rejected. The problem was to build this equipment to take up the least possible floor space and to tie it in with a streamlined production line.

After a survey of the plant's requirements, the Conditioned Air Equipment Co. investigated other equipment for doing similar jobs. Some required up to 40 feet by 40 feet of floor space and considerable labor and maintenance to keep them in operation.

So they decided to start from scratch and came up with a unit taking up only 26 feet by 26 feet of floor space and requiring only the part time services of one girl to load and unload.

The unit consists essentially of a conveyor system leading in and out of a series of insulated tanks for water at 40° F. and 212° F. The shot is brought from room temperature to 40° F. (specifications call for cooling below 60° F.), in one water bath, is then plunged into a second bath with water at 212° F. In a third bath, it is brought down to 40° F. again and from here it goes through a soluble oil bath to prevent corrosion.

Refrigeration for the unit is provided by a 5-hp General Electric condensing unit connected to an Acme cooler. The condensing unit, water cooling unit, and a circulating pump are mounted below the tanks. A standard General Electric gas-fired boiler supplies heat for the 212° tanks.

A sidelight is a water coil in the bottom of the cold water tanks. This is connected with a bubbler system to provide cold drinking water for employes. Because of health considerations and high room temperature in the plant, it was necessary to place a mixing valve in the line so that the temperature of the water at the bubblers may be maintained at any desired temperature.

Before and After

Two pieces of shot following test. Sample at left is perfect, one at right is cracked.

Priority Sales to Steel Co. Stores Total $30,000

BIRMINGHAM, Ala.—Hill Sales, Inc., of this city recently furnished some $30,000 worth of commercial refrigeration and display equipment on a priority basis to the Republic Steel Corp. This was used in remodeling five of the concern's commissaries. A contract is pending for the remodeling of one other company store.

The Republic Steel Corp. plant is engaged almost exclusively in war production and found it necessary to remodel its stores, operated chiefly for the benefit of employes. These stores were about 20 years behind the times in the way of refrigeration and other facilities.

Earle Wolfe, executive of Hill Sales, said that equipment furnished for one of the typical stores, that at Sayreton, near Birmingham, included the following: an 8 x 20 Hill walk-in cooler with illuminated space on the side for display of dairy products; two 14-foot double-duty Hill refrigerated display cases; one 8-foot fish and poultry case; six 10-foot central island stands or gondolas; one Hill beverage cooler; one 12-foot Hill vegetable display stand; one 10-foot flour rack, one 10-foot cake and bread rack, one candy case and a quantity of metal buggies and baskets.

Mr. Wolfe said that the walk-in cooler had matched panels on either side, so as to give a 60-foot expanse of white walls all the way across the back side of the store. The store also has new floors, new fibre board ceilings and fluorescent lighting so as to make it one of the most modern to be found.

Refrigeration and Air Conditioning As a War Production Tool

By L. W. Clifford, Sales Development Section Supervisor, Westinghouse Electric & Mfg. Co., East Springfield, Mass.

3. Air Conditioning for Optical Manufacture

Probably no other industry has more aggravating problems in providing adequate protection against product contamination and damage during their many manufacturing processes, than has the optical industry. From the grinding room through to final assembly rigid employe rules and regulations are enforced and almost every known device employed to provide protection against such contamination and damage. And not the least of these devices is air conditioning.

To review some of the problems.

Air-borne dust is one of the chief enemies of a flawless product and must be eliminated through mechanical or electrical means.

Perspiration on the hands of the workers in the cementing and assembly rooms is a constant source of trouble.

In the grinding room, the air-borne glass dust entrapped in underarm perspiration causes an irritating rash through which many man-hours of time have been lost.

Face powder, rouge and lipstick, unless banned by factory regulations, may cause countless rejects in the inspection, cementing and assembly rooms through their contaminating and etching effect.

Wide variations in room temperature make definite predetermined settings of pitch and lap in the grinding and polishing rooms impossible, thereby slowing up production until compensating settings are made.

The consistency of the cement used in cementing the lenses varies with temperature and humidity, again hampering full speed production.

Lint and dust from clothing, while it can be controlled by the use of immaculate, lint-free uniforms and cellophane jackets worn over ordinary clothing, is another hazard against which a guard must be kept.

In the storage of the finished lenses another problem is found. If the relative humidity is too high the paper in which the lenses are wrapped is affected and etching of the lens surfaces results.

We see, then, all through the processes three principal offenders—excessively high as well as widely varying temperatures, air-borne dust, lint and abrasive particles and uncontrolled relative humidities.

We find the solution to these problems in air conditioning. In some cases, the precipitron is used in conjunction with the air conditioning equipment, being installed just ahead of the filter section on the air handling unit.

Worthington Reports Profit

HARRISON, N. J.—A net profit of $2,018,687 after $8,285,197 provision for federal income and excess profits taxes, based on an 80% rate, is announced here by the Worthington Pump and Machinery Corp. for the nine months ended Sept. 30.

NEED METHYL CHLORIDE?

Now is the time to get it!

Ample supplies of Methyl Chloride are at present available for the charging and servicing of installations which may be constructed or serviced under existing War Production Board regulations. We expect to be able to fill the approved requirements of the refrigeration industry so far as material is concerned. It is suggested that you do not stock up unnecessarily. Electrochemicals Department E. I. du Pont de Nemours & Co. (Inc.) Wilmington, Delaware

DU PONT REG. U.S. PAT. OFF.

METHYL CHLORIDE

Don't let idle cylinders hold up supplies now available. Look through your stocks and warehouses for any empty cylinders, or cylinders which can be emptied . . . *and return them promptly.*

Better Things for Better Living . . . Through Chemistry

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

KEEP 'EM RUNNING

THE old story of "a stitch in time" never had greater application than today... so important is the need for keeping all existing equipment running.

While practically 100% of Weatherhead facilities are devoted to production for Victory, we appreciate the fact that the home front is vital also, and as far as possible we are supplying this front with parts, fittings and accessories—to keep refrigeration equipment running. Call on us for what you need. We cannot make long-range promises, but will do our best to take care of your requirements.

THE WEATHERHEAD CO.
300 East 131st Street
Cleveland, Ohio

Refrigeration Valves, Fittings and Accessories

How To Service Two and Three-Stage Units for Low-Temperature Work

Operating Cycle of Condensing Units Now Being Used In War Production Is Traced As Aid to Service Engineer

Editor's Note: In order to aid the service engineer in rendering proper field service to two and three-stage condensing units which are now being used extensively in war plants for the testing of airplane parts, Paul B. Reed, service manager of the electric refrigeration and air conditioning division of Servel, Inc., has prepared a series of two articles on the operation and servicing of these units. The first article, which appears below, discusses the cycle of operation and then takes up certain definite service problems which the service engineer may be called upon to correct.

P. B. REED, Service Manager,
Electric Refrigeration and Air Conditioning Division, Servel, Inc.

Although refrigeration in industrial processing was used to a limited extent before the war, the need for speeding up production and at the same time obtaining fine finishes and close tolerances has vastly expanded this phase of the refrigeration industry. Much experimental and development work has already gone into new equipment, new processes and new applications, but this is still going forward and it can be reasonably expected that future equipment will be more highly developed and standardized and that many additional applications will be found for this type of refrigeration.

The manufacture and development of these specialized installations has gone forward so rapidly in the face of urgent need in the war industries that the service men of the country have not had opportunity to gradually become familiar with this type of equipment as has been the case with most commercial applications; also heretofore, there has not been a great deal of service information available on this specialized equipment.

As a result service men have been inclined to be timid about rendering service on these jobs. They have not been familiar with two and three-stage compression and have hesitated when called upon to service such installations. This is a natural reaction but the service man should bear in mind that there is nothing mysterious about two and three-stage compression and he will find that the troubles that are met with on these installations are caused by about the same things that cause trouble on ordinary market cooler and case jobs.

These installations are used on equipment for testing airplane instruments and for other vital services on which depend the lives of our soldiers and sailors. The refrigeration service man can render a patriotic and highly useful service by doing all he possibly can to help keep these jobs going without interruption.

In order to better appreciate the problems involved in the installation and service of low temperature compression systems it would be well to first trace the cycle of operation of two and three-stage systems. This article will concern itself only with true two and three-stage compression systems for low temperature applications as differentiated from the "cascade" systems which are sometimes employed in order to obtain low temperatures.

It is generally considered inadvisable to employ ordinary refrigerating compressors of the single stage type directly on evaporators installed at temperatures below —40° F. using "Freon-12" as the refrigerant. At —40° the refrigerant pressure in the evaporator (F-12) is approximately 11 inches vacuum or 9.3 lbs. per sq. in. absolute. Assuming a 125 lbs. gauge head pressure (140 lbs. per sq. in. absolute) would mean a compression ratio of 15 to 1.

On higher compression ratios the losses in a compressor due to re-expansion and other factors would involve such low compressor capacities and efficiencies as to make single stage compression impractical. A —60° evaporator employing "F-12" would involve a saturation pressure in the evaporator of 19 inches vacuum or approximately 5.4 lbs. per sq. in. absolute and with the same discharge pressure of 140 lbs. absolute would result in compression ratio of approximately 26 to 1. However, by splitting the compressions into two steps we can hold the compression ratio to approximately 5 to 6 to 1 in each step, thus obtaining high efficiency in compression and overall performance.

The suction gas from the —60° evaporator is fed into the first stage consisting of three cylinders of a four-cylinder compressor. There the pressure is raised from 19 inches vacuum to about 10 lbs. per sq. in. gauge. After being compressed in the three cylinders of the first stage it passes through their respective discharge valves and is then fed into the suction side of the one cylinder comprising the second stage, where it is recompressed from the 10 lbs. per sq. in. (gauge) pressure to about 125 lbs. per sq. in. gauge.

The suction gas from the —60° evaporator is so rarified at 19 inches vacuum that three cylinders are required to compress this gas in sufficient volume to feed the one second-stage cylinder even at the 10 lbs. per sq. in. pressure which is the suction pressure of the second stage. This 10 lbs. per sq. in. suction pressure which is the discharge pressure of the first stage and the suction pressure of the second stage is frequently referred to as the "intermediate" stage.

From the discharge valve of the second stage the hot gas goes to the condenser and is condensed in the usual manner and then fed to the receiver and from there on to the expansion valve on the —60° evaporator. However, the liquid F-12 refrigerant in the receiver at ordinary room temperature of 80° to 90° F. has a great deal of sensible heat in the liquid itself and when this warm liquid is fed into the —60° evaporator considerable "cooling effect" (latent heat of vaporization) of the liquid is lost to actual temperature reduction of the evaporator by reason of the necessity of a large percentage of this cooling effect being employed to actually remove the heat of the liquid itself before it is brought down to the temperature of the evaporator; that is, the liquid must itself be cooled through approximately 150° from the room temperature down to the —60° evaporator.

To avoid the necessity of doing this a liquid sub-cooler is employed (which is in effect an auxiliary evaporator operated in multiple with the main evaporator and with a separate expansion valve) for the primary purpose of cooling the liquid refrigerant between its passage from the receiver to the expansion valve on the main —60° evaporator.

The major part of the sensible heat of the liquid is thus taken out and by the time the liquid reaches the expansion valve on the —60° evaporator it is brought down to approximately 5 or 6° above zero. The use of a liquid sub-cooler is necessary in order to obtain best efficiency and to avoid the use of large cumbersome equipment including expansion valves, and other accessories.

After the suction gas from the

(Continued on Page 25, Column 1)

Cycle of 2-Stage System

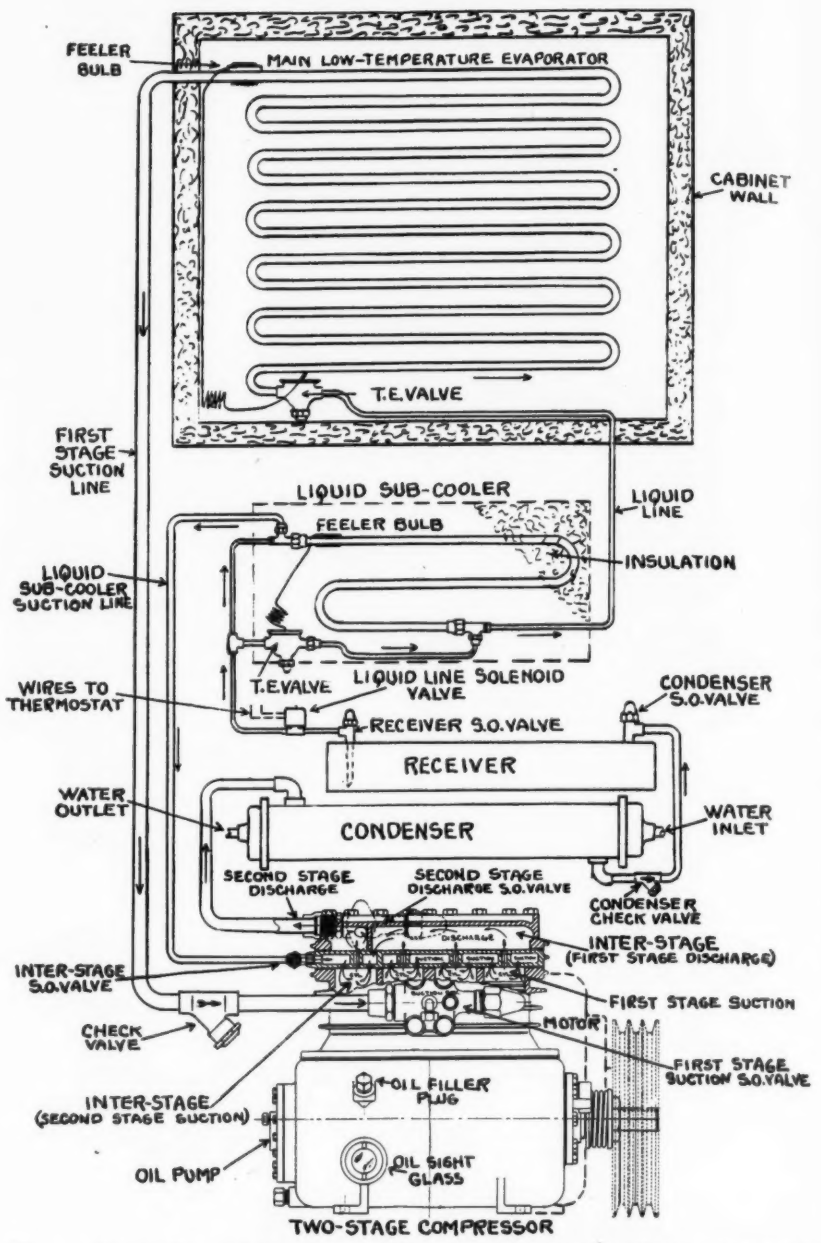


Fig. 1 shows the cycle of operation of a typical two-stage condensing unit and traces the path of the refrigerant from the compressor through the various stages to the evaporator.

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Refrigeration valves, fittings and accessories, as well as many other products of this company, are now in the service of our armed forces, in the air, afloat and ashore—and on this, our 25th anniversary, we dedicate ourselves to an all-out effort for war... knowing that only through the winning of it can we gain a lasting peace. We are now preparing for and hopefully looking forward to the time when we can again resume peace-time trade with our many good customers who have contributed so much to our TWENTY-FIVE successful years. It is our resolve to then provide them with better products and better service.
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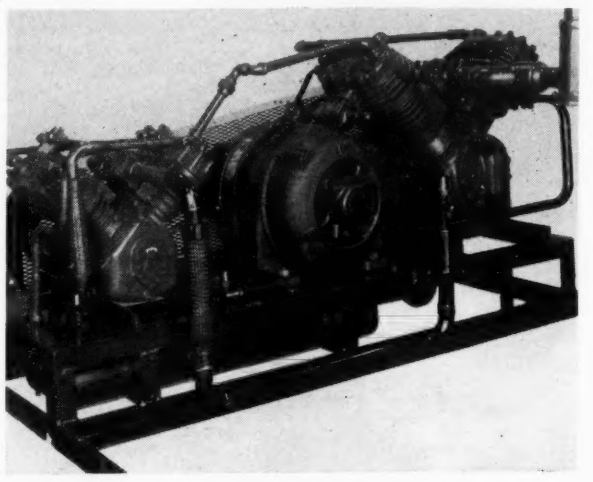
Three-Stage Condensing Unit



This is a three-stage condensing unit which is made up of a two-stage compressor and a single-stage compressor, both driven by the same motor.

Reed Gives Hints to Service Men on Multi-Stage Condensing Units Operation

(Continued from Page 24, Column 5)

—60° evaporator has passed through the first stage and is compressed it becomes relatively hot due to the heat of compression and if it were fed directly at this high temperature into the single cylinder which is the second stage it would have a tendency to burn up the valves in the second stage and to decrease the overall efficiency.

Some systems use "inter-coolers," sometimes employing water and sometimes refrigerant to cool this inter-stage gas before it is fed into the suction side of the second stage.

Another manner in which this can be done is shown in the accompanying line drawing (Fig. 1), from which it will be seen that the evaporator coil of the liquid sub-cooler feeds into the suction side of the second stage.

Since the inter-stage pressure is approximately 10 lbs. per sq. in. gauge the refrigerant temperature in the evaporator coil of the liquid sub-cooler will be just above zero. By feeding this cold gas from the evaporator coil of the liquid sub-cooler into the suction side of the second stage the heat of compression is absorbed and in fact the expansion valve on the liquid sub-cooler is "over fed" slightly so that actually a little liquid refrigerant is allowed to feed into the inter-stage and as a result the heat of compression is absorbed both by the specific heat of the gas and by the latent heat of vaporization of the small droplets of liquid refrigerant.

A check valve is placed in the main suction line from the low temperature evaporator to prevent rising suction pressures in the crankcase, during the idle cycle (due primarily to seepage of the inter-stage pressure back to the suction line) from passing back through the suction line and into the —60° evaporator where it would not only tend to warm up the evaporator, but also would condense in this cold evaporator, and when the compressor started on the next operating cycle would slug back to the compressor as a liquid, thus causing damage to the valves and other parts of the compressor.

Low temperature installations are usually operated thermostatically. Very frequently the thermostat operates a solenoid valve in the liquid line and when this solenoid valve is closed the unit pumps down and cuts off on the low pressure control in the conventional manner. Sometimes the pressure control is connected to the intermediate stage instead of the suction pressure of the first stage. Due to special applications, control systems on low temperature two and three-stage systems are quite varied.

Three-stage compression is employed for main evaporator temperatures below —75° F. for at about that temperature the tendency is for the ratio of compression, even with two-stage compression, to become excessive; so instead of employing simply two steps, the third step is inserted.

For example, the suction gas from a —100° F. evaporator would be fed into the first stage, compressed and then fed into the suction side of the second stage, recompressed and fed into the suction side of the third stage, where after being again compressed it would pass to the condenser and receiver in the usual manner.

Three-stage compression can be satisfactorily handled in one single compressor body or it may be done by combining a two-stage compressor with a single-stage compressor, both driven by the same motor.

"Freon-12" is used in most two and three-stage systems but "Freon-22" or Propane are frequently used, particularly in three-stage systems.

Service Hints

The following discussion of service on low temperature, two and three-stage systems, is not intended as a service manual but merely points out some of the factors to be considered by the service man:

Leaks

Leaks must be carefully avoided just the same as in high temperature installations but bearing in mind that leaks on the low pressure side of the system are especially undesirable, for the operating suction pressure on a —60° F. coil is 19 inches of vacuum (F-12). If there is a leak on the lowside, air and moisture are rapidly drawn into the system. On low temperature installations it is, therefore, even more than ordinarily important that all leaks be eliminated, even very small leaks that might be overlooked on higher temperature applications.

Moisture

Moisture in very low temperature systems will be particularly aggravating even though moisture will form into ice in any evaporator operating at lower than 32° F.; however, low temperature systems must be kept just as especially dry not only because of the moisture forming into ice and the corrosive effect of moisture on internal parts but also for reasons outlined later under the discussion on oil.

The suction pressure on many of these applications never gets up to 0 lbs. gauge even during the idle cycle. The service man must, therefore, be careful about breaking the joints on the lowside for service operations. Rather than to open the lowside that is on a vacuum it is much better to bypass a certain amount of refrigerant into the lowside and bring it up to 0 lbs. gauge or a few pounds above before opening the system for service operation, and afterwards purge sufficiently rather than draw a vacuum.

This will eliminate the hazard of drawing a great deal of moisture into the lowside which will not be removed even though a good vacuum is pumped afterwards, for the evaporator will still be cold and the moisture will stay in it.

It goes without saying that a good dehydrator of ample size should be put in the liquid line on any of these installations after a service operation that involves opening the system.

Foreign Matter

The presence of dirt, scale or other foreign matter in a low temperature two or three-stage system may have an identical effect as in higher temperature systems. The discharge or suction valves may be prevented from seating tightly, bearings or seals may be scored, and expansion valve operation may be affected. Compressors for use on low temperature applications must be made with extremely close piston head clearance for greatest efficiency and foreign matter in the cylinders may, therefore, very easily result in broken suction valves or suction valve retainers.

(To Be Continued)

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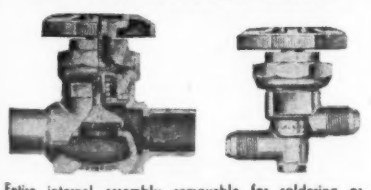
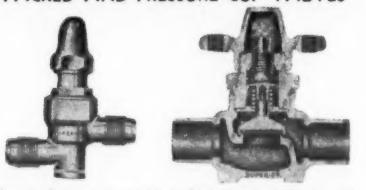
DIAPHRAGM PACKLESS VALVES



Entire internal assembly removable for soldering or inspection. Equipped with famous pressure cup below diaphragm. Two and three way. Flare sizes ¼" to ¾"; Sweat sizes ¼" to ⅞".

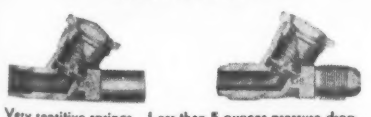
PACKED AND PRESSURE CUP VALVES



Flare and sweat sizes ¼" to ⅝" (two and three way) have hex seal cap. Sweat sizes ¼" to 2⅛" (globe) have wing nut seal cap. Internal assembly (all sizes) removable for sweating to valve body.

★ Refrigeration is Vitally Essential to Our National Defense Efforts ★

CHECK VALVES



Very sensitive springs. Less than 5 ounces pressure drop. Positively will not chatter or hum. All internal parts easily removable for sweating or inspection. Sizes ¼" to ¾" Flare; ¼" to ⅞" Sweat.

LIQUID INDICATORS

With or without seal cap. Flare sizes ¼" to ⅝"; Sweat sizes ¼" to 1⅜". On ½" Sweat to 1⅜" entire upper assembly may be removed as a unit to facilitate soldering of refrigerant lines to connections.

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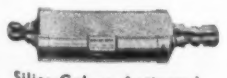
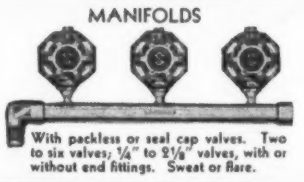
DEHYDRATORS



Silica-Gel or Activated Alumina. Refillable and non-refillable. ¼" to ⅝", ¼ to 5 H.P.; 2 to 60 cubic inches.

MANIFOLDS



With packless or seal cap valves. Two to six valves; ¼" to 2⅛" valves, with or without end fittings. Sweat or flare.

FILTERS

Highly efficient sack type filter. Sizes ¼" SAE to ⅜" SAE. One to five horsepower.

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FITTINGS

Unions, adapters, elbows, tees, crosses, caps, etc. ⅛" through 1".

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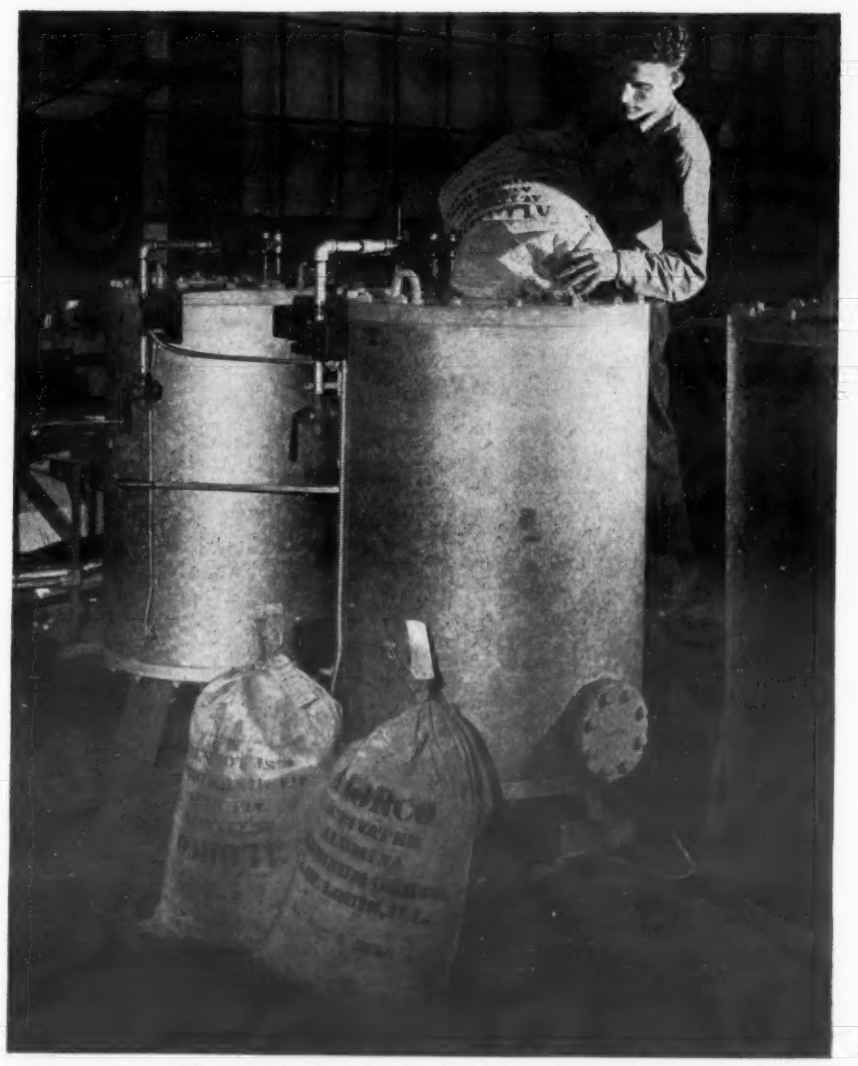
This workman is doing exactly what you do when you insert a dehydrator charged with Activated* Alumina in a refrigerator line: making certain of high drying efficiency. This Lectrodryer is going to war, to provide speedy drying service for some vital manufacturing process. You are aiding the war effort by keeping refrigeration systems free from trouble.

Alorco Activated Alumina helps you do this job by removing every trace of moisture from the refrigerants, to dew points of –110°F. You avoid valve freeze-ups. It also removes sludge and acid. You reduce wear and prevent corrosion.

You can get cartridges and dehydrators charged with Alorco Activated Alumina through your regular supply houses. Insist on the genuine product and be assured of maximum drying and purifying efficiency. ALUMINUM COMPANY OF AMERICA (*Sales Agent for* ALUMINUM ORE COMPANY) 1908 Gulf Building, Pittsburgh, Pa.



This machine built by Pittsburgh Lectrodryer Corp.

These manufacturers supply cartridges and dehydrators charged with Activated Alumina: American Injector Company . . . Fedders Mfg. Company . . . Henry Valve Company . . . Imperial Brass Mfg. Company . . . Kerotest Mfg. Company. . . McIntire Connector Company . . . Mueller Brass Company . . . Cyrus Shank Company

ALORCO

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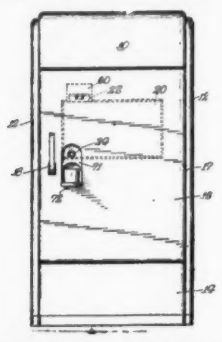
★ ALORCO ★
ACTIVATED ALUMINAS
DRY REFRIGERANTS DRY

PATENTS

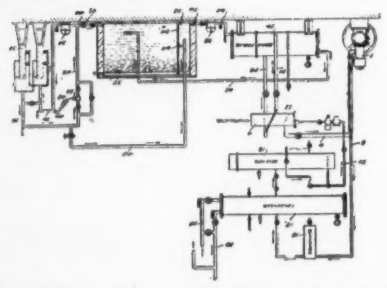
Weeks of Oct. 20 & 27

2,299,103. COOL WATER RESERVOIR FOR REFRIGERATORS. Kinney I. Miller, Lancaster, and Irwin Dunbar, Kirksville, Mo. Application July 7, 1941. Serial No. 401,326. 5 Claims. (Cl.62—89.)



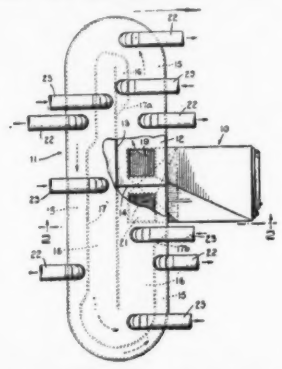
1. In a refrigerator cabinet wall structure including outer and inner plates and insulating material therebetween the combination of a removable liquid reservoir comprising a relatively thin receptacle having a tap adjacent the bottom and a normally closed filling aperture at the top of said receptacle, said wall structure having a recess in the inner plate slightly larger than the outside dimensions of said receptacle, said receptacle being positioned in the recess, a sealing strip around the recess forming a dead air space between the bottom thereof and the receptacle when in place and releasable engaging elements on the walls of said receptacle and said inner place respectively for releasably securing the receptacle to the wall.

2,299,188. REFRIGERATION SYSTEM. Ralph E. Stork, Hohokus, N. J., and Robert C. Russell, Greene, N. Y. Application March 13, 1940. Serial No. 323,716. 6 Claims. (Cl. 62—101.)



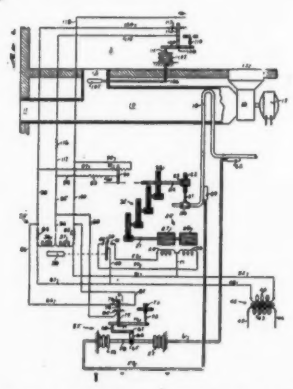
2. In a liquefied gas refrigerating system, the combination with a storage tank for heat transfer and refrigeration storage medium, a cooler for said medium having connections to said tank whereby the medium may be brought into heat exchanging relation to a liquefied gas refrigerant in said cooler and then discharged into said tank, a compressor and a condenser for the vaporized refrigerant from said cooler, and refrigerating equipment connected to said tank, of a pump in said refrigerating equipment connections for effecting circulation of said medium through said refrigerating equipment from the tank, means for varying the amount of said medium withdrawn from said tank by said pump and correspondingly the amount to be discharged from the refrigerating equipment into the tank in accordance with the temperature requirements of said refrigerating equipment, a second pump in the connections between said tank and said cooler constructed and arranged to produce a substantially constant flow of medium through said cooler and back to said tank, and means for substantially immediately directing the heated medium discharged from said refrigerating equipment into the intake of said second pump.

2,299,217. AIR TREATING APPARATUS. Herbert Alfred Faber, Cincinnati, Ohio. Application Jan. 3, 1941. Serial No. 372,964. 3 Claims. (Cl. 98—33.)



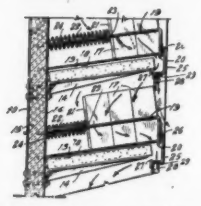
1. Distributing and collecting means comprising a box having a bottom wall, a top wall, and a peripheral lateral wall, all of which collectively define a closed chamber; internal partition walls dividing said chamber into a single duct-way doubled upon itself so that its terminal ends are mutually adjacent; internal partition walls dividing said duct-way into two side-by-side ducts of oppositely graduated cross-sections, respectively, each running from large to small substantially mutually uniformly, the large ends of said ducts being located at the said terminal ends, respectively, of said duct-way; a main inflow opening leading into the large end of one of said ducts; a main outflow opening leading from the large end of the other of said ducts; subsidiary outflow openings leading from said one duct at intervals along the length thereof substantially in accordance with the graduated character thereof, and subsidiary inflow openings leading into said other duct at intervals along the length thereof substantially in accordance with the graduated character thereof.

2,299,335. AIR CONDITIONING SYSTEM. William I. McGrath, St. Paul, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application June 25, 1938. Serial No. 215,796. 9 Claims. (Cl. 62—6.)



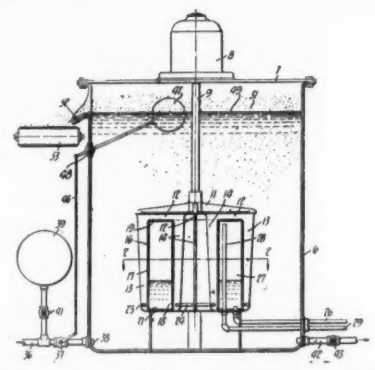
1. In a system of the class described, temperature changing means, a valve for controlling the flow of a temperature changing medium through said temperature changing means, a motor for controlling the position of said valve, an expansible device responsive to the temperature of the temperature changing medium entering said temperature changing means, an expansible device responsive to the temperature of the temperature changing medium leaving said temperature changing means, circuit controlling means for said motor controlled by the conjoint action of said expansible devices for positioning the valve in response to changes in temperature differential between the inlet and outlet of said temperature changing means, and means responsive to a condition which is a measure of a need for more or less temperature changing for varying the effect of said circuit controlling means on the motor.

2,299,347. REFRIGERATED DISPLAY SHELF. Milton Rifkin, Denver, Colo. Application April 13, 1942. Serial No. 438,857. 13 Claims. (Cl. 62—89.5.)



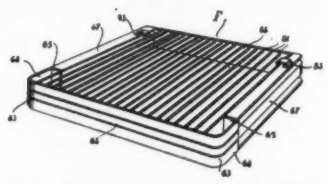
2. A refrigerating display case comprising: a vertical series of horizontally extending refrigerating shelves; means for supporting packages on each shelf; a shelf front member in front of each shelf and projecting above the shelf to contact the foremost packages along the shelf, said refrigerating shelves being inclined downwardly and rearwardly to the back of said case to form cold air pockets over each shelf; and a circulation passage between each shelf and its shelf front member to allow cold air to overflow and descend from shelf to shelf.

2,299,414. APPARATUS FOR PRODUCING REFRIGERANTS. Ellis H. Spiegl, Salinas, Calif. Application July 15, 1940. Serial No. 345,572. 3 Claims. (Cl. 62—106.)



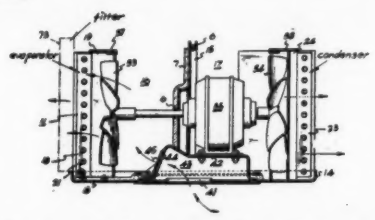
1. An ice maker comprising a vat adapted to contain liquid and a supernatant layer of ice crystals, means for supplying liquid to said vat, means for releasing supernatant ice crystals from said vat, a vessel within said vat and adapted to be submerged in said liquid well below said layer, means for circulating a refrigerant through said vessel, and means moving through and agitating said liquid around said vessel while leaving liquid adjacent said layer quiescent for removing ice crystals from said vessel.

2,299,512. REFRIGERATOR SHELF. Enoch Swedman and Henning G. Bergman, St. Paul, Minn., assignors to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application April 19, 1940. Serial No. 330,522. 4 Claims. (Cl. 211—151.)



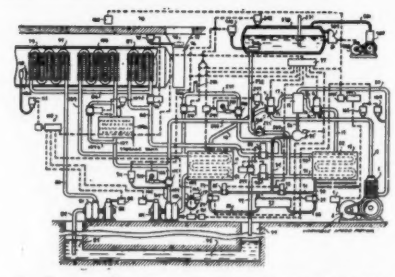
1. A refrigerator shelf comprising a front frame strip, rearwardly extending side portions on said front frame strip, a transversely extending rear frame strip, supporting means connecting said front and rear frame strips, and opposed channels extending between the rearwardly extending side portions of said front frame strip and the ends of said rear frame strip.

2,299,527. AIR CONDITIONING APPARATUS. Clifford S. Cody and Regis D. Heitchue, Springfield, Mass., assignors to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Feb. 3, 1940. Serial No. 317,094. 3 Claims. (Cl. 62—140.)



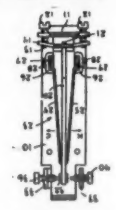
3. A window-mounted self-contained unit air cooler comprising bottom, top, and vertical walls forming an enclosure for the unit, means for mounting the unit air cooler in the window of a room, an upstanding partition within the enclosure dividing the same into an air cooling compartment and a machine compartment, an evaporator in the air cooling compartment, a compressor and a condenser in the machine compartment, means for connecting said evaporator, said compressor and said condenser in a complete refrigerant circuit, said bottom wall having an outdoor air inlet therein disposed at least partly on the machine compartment side of the partition, a duct member in the machine compartment providing a passage extending from said inlet opening to and communicating with the air cooling compartment, a fan motor mounted on said duct member, and a fan driven by said fan motor for effecting flow of outdoor air over said condenser.

2,299,531. AIR CONDITIONING SYSTEM. Robert B. P. Crawford, Miami, Fla. Application Nov. 12, 1938. Serial No. 239,967. 13 Claims. (Cl. 62—6.)



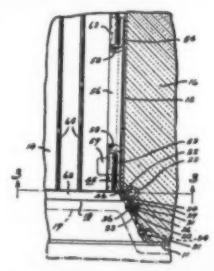
1. In a system of the class described, in combination, a refrigeration system having an evaporator and a condenser, means for conditioning a space including ga precooling device and a cooling device, means for passing a cooling medium through said precooling device and then in heat exchange relationship with said condenser, means for passing a heat exchange medium in heat exchange relationship with said evaporator and then through said cooling device, means for varying the output of said refrigeration system in accordance with the cooling load on the system, and thermostatic limit control means responsive to the temperature of the heat exchange medium passing to said cooling device for additionally controlling said refrigeration system.

2,299,533. TEMPERATURE RESPONSIVE DEVICE. Benjamin Cyr, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application July 5, 1941. Serial No. 401,199. 11 Claims. (Cl. 200—137.)



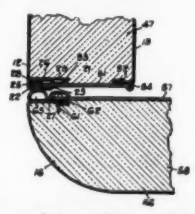
1. In a device of the character described, metal ribbon temperature responsive means including two heat expansible legs, a first mounting means for one end of said legs, a second movable mounting means for the other end of said legs, means associated with one of said mounting means for tensioning said legs whereby the differential expansion between said legs causes them to move said movable mounting means when heat is applied to one of said legs, a pair of stationary contacts, and a movable contact carried by said movable mounting member between said stationary contacts, said movable contact being in engagement with one of said stationary contacts when said two legs are at the same temperature, the differential expansion between said legs when heat is applied to one of them causing them to move said movable contact out of engagement with said one and into engagement with said other stationary contact.

2,299,655. REFRIGERATING APPARATUS. Donald H. Reeves, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Sept. 25, 1940. Serial No. 358,331. 10 Claims. (Cl. 312—156.)



1. In combination, a refrigerator cabinet provided with a liner defining a plurality of walls of a food storage chamber therein, said cabinet having an aperture therein forming an access opening for said chamber, a mold element forming a wall for said chamber access opening, a door for normally closing said opening, shelf supporting means having a portion thereof disposed between said liner and said mold element at each side of said chamber access opening, each of said means including a part secured to said cabinet exteriorly of said chamber and concealed by said mold element, and each of said means including another part extending a substantial distance into said chamber along a side wall thereof and being constructed and arranged to form the sole supporting means for a shelf adapted to be positioned within said chamber.

22,214. REFRIGERATION APPARATUS. Orland H. Yoxsimer, Mansfield, Ohio, assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Original No. 2,213,155, dated Aug. 27, 1940. Serial No. 250,530, Jan. 12, 1939. Application for reissue May 29, 1941. Serial No. 395,829. 12 Claims. (Cl. 220—9.)



12. In a refrigerator cabinet having vertical front and side walls, the combination of inner and outer shells with heat insulation therebetween, said inner shell defining a food-storage compartment having an access opening in the front

(Concluded on Page 27, Column 1)

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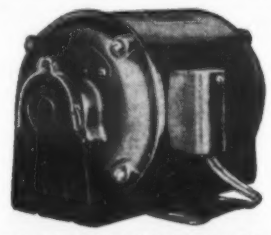
TYPE M SHADED-POLE FAN MOTORS are single-phase induction motors of simple construction. Ideal for fan and blower drives in which the fans are mounted directly on the motor shaft. Totally-enclosed and open-type; rigid or resilient mounted; 1/125, 1/80 to 1/40 and 1/30-hp.



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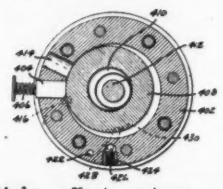
Patents (Cont.)

(Concluded from Page 26, Column 5)

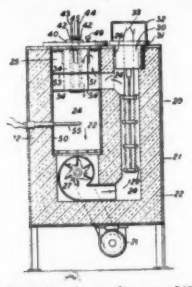
thereof, said outer shell having a concentric opening in the front thereof, a flange on said inner shell extending toward the outer shell peripherally of the access opening, a flange on the outer shell extending towards said inner shell peripherally of said concentric opening and substantially parallel to the plane of the front wall of the cabinet, a breaker strip extending between said flanges and embodying an exposed faced portion and edged portions, one of said edge portions being entirely disposed at the rear of the flange on the outer shell and the other of said edge portions being disposed entirely in front of the flange on said inner shell, means for securing the respective edges of the breaker strip to the inner and outer shells, a substantial portion of the breaker strip being disposed substantially parallel to the plane of the front wall of the cabinet, and exposed portions of the flange on the outer shell being relatively narrow compared to the exposed surfaces of said breaker strip, a door for closing the access opening and a gasket disposed between said door and the outer surface of said flange on the outer shell when the door is closed, said gasket being substantially coextensive in cross section with the entire exposed surface of said flange on the outer shell and providing the sole sealing means between said door and the remainder of said cabinet.

2,299,311. COMPRESSOR FOR REFRIGERATING APPARATUS. Robert N. Feicht, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Feb. 26, 1938. Serial No. 192,846. 1 Claim. (Cl. 230—47.)



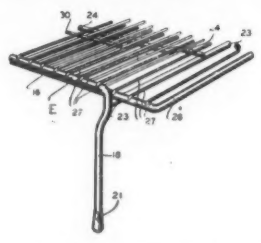
A multiple effect rotary compressor for drawing gas through high and low pressure gas inlets, including an impeller casing provided with spaced parallel plane wall surfaces and a round wall surface extending between the plane wall surfaces, an impeller having surfaces in sealing relation with the spaced walls of the casing, said impeller being provided with a round surface between the parallel surfaces different in diameter than the round surface of the casing to provide a pumping chamber between the impeller and the casing, means for providing a seal transversely across the pumping chamber between one portion of the casing and the impeller to provide a division in the pumping chamber, a low pressure gas inlet and an outlet communicating with the pumping chamber upon opposite sides of said seal, means for moving the round wall surface of the impeller progressively into sealing relation with successive portions of the round wall surfaces of the casing beginning with the low pressure gas inlet and ending with said outlet, a high pressure gas inlet port so located entirely in one of said plane wall surfaces remote from the round wall surface of said casing that it is entirely separated and sealed from the low pressure inlet by the impeller during the initial portion of each cycle and uncovered during an intermediate portion of each cycle and separated and sealed from the outlet by the impeller during the final portion of each cycle.

2,299,867. CALIBRATING APPARATUS FOR TEMPERATURE REPORTING DEVICES. Henry M. Wolfson, New York, N. Y., assignor to Western Electric Co., Inc., New York, N. Y., a corporation of New York. Application Jan. 10, 1939, Serial No. 250,129. 6 Claims. (Cl. 73—151).



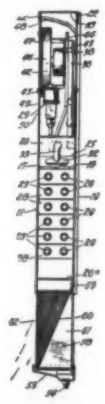
5. In an apparatus for calibrating temperature responsive devices and including a tank to contain a body of fluid heat transferring medium and means to alter the temperature of and to circulate the medium in the tank, a housing in the tank to contain a temperature responsive device to be calibrated, the said housing having a pair of nested containers having ports matchable to admit the mediums to be circulated into and out of the housing, and means to move one of the nested containers with respect to the other to move the ports of one container out of matched relation to the ports of the other container to close the ports and isolate a portion of the medium within the housing and thereby maintain the temperature of the isolated portion substantially unchanged.

2,299,885. ADJUSTABLE SHELF COMBINATION WITH REFRIGERATOR COMPARTMENT. Walter A. Ellsworth and John E. Mills, St. Paul, Minn., assignors to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application April 18, 1941, Serial No. 389,212. 7 Claims. (Cl. 211—153).



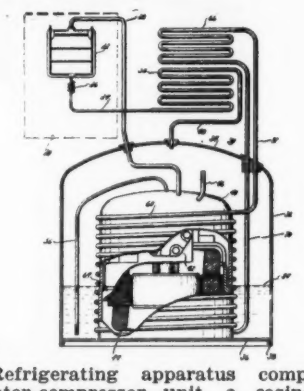
4. An extendible refrigerator shelf including a fixed section and a removable section, said removable section having a pair of depending lugs, said fixed section being provided with a pair of legs mounted on the remote side thereof, said fixed section including a cross rail, said cross rail being adapted to connect said pair of legs and to provide a means by which said removable section may be telescoped beneath said fixed section, said pair of depending lugs on said removable section being adapted to guard against accidental removal of said removable section by engaging said cross rail, and said removable section being adapted to be entirely removed from said fixed section whenever so desired.

2,299,939. SPACE COOLER. Sven V. Swanson, Forest Park, Ill., assignor to Refrigeration Appliances, Inc., Chicago, Ill., a corporation of Illinois. Application Nov. 25, 1938, Serial No. 242,184. 7 Claims. (Cl. 62—140).



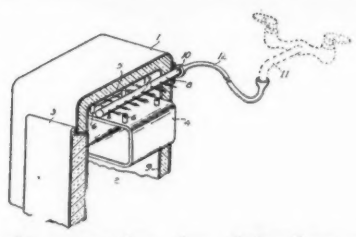
5. In a refrigerating device, a vertically elongated housing having an air inlet at its upper end and air outlets adjacent its lower end in the front and sides of the housing, an impeller for circulating air through the housing from the inlet to the outlets thereof, heat exchange coils in the housing in the path of the circulated air, and a deflector for directing the circulated air downwardly and outwardly through said outlets, said deflector having a front face sloping downwardly substantially from the back of said housing toward the lower end of said front outlets and also having the lower end of said front outlet and also having opposite side faces angularly disposed with respect to said front face and sloping downwardly and outwardly toward the lower ends of said side outlets.

2,300,005. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application May 24, 1939, Serial No. 275,379. 2 Claims. (Cl. 62—115).



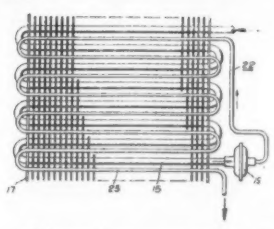
1. Refrigerating apparatus comprising a motor-compressor unit, a casing enclosing said unit and being arranged in heat exchange relation therewith, a second casing enclosing the first casing for receiving refrigerant discharged by said compressor and being adapted to contain a quantity of lubricant, a condenser for condensing said refrigerant, and a volatile refrigerant containing member extending into said lubricant and being directly secured to said first casing adjacent said motor and said compressor for absorbing heat therefrom and including a condensing portion disposed exteriorly of said second casing.

2,300,085. METHOD AND APPARATUS FOR DEFROSTING AND WASHING REFRIGERATORS. Clarence R. Yunker, Elsie, Ore. Application March 29, 1941, Serial No. 385,876. 5 Claims. (Cl. 62—1).



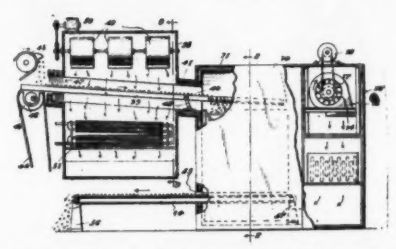
1. An apparatus for defrosting and washing a refrigerator comprising walls defining a food compartment and having a cooling unit mounted in said compartment, said apparatus comprising a spray nozzle mounted in the upper portion of said food compartment adjacent the cooling unit therein, orifices in said nozzle for directing sprays of water onto said cooling unit and onto the walls and fixtures of the compartment, said nozzle extending through one wall of said compartment, supply means connecting said nozzle with a water system, and valve means for controlling the supply of water to said nozzle.

2,300,086. REFRIGERATION APPARATUS. Carl F. Alsing, North Wilbraham, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application July 24, 1939, Serial No. 286,218. 6 Claims. (Cl. 62—8).



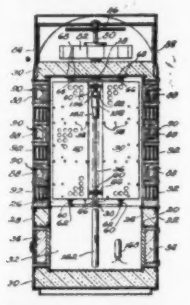
1. In refrigerating apparatus, the combination of an insulated cabinet, an evaporator for cooling the interior of said cabinet, a compressor for withdrawing vaporized refrigerant from said evaporator, a suction tube connecting the evaporator and the compressor, a condenser tubing for receiving compressed refrigerant vapor from the compressor, means for conducting refrigerant liquid from the condenser to the evaporator, said means including a capillary flow impeding tube, cooling fins secured to both said capillary tube and said condenser tubing, and means for conducting a cooling medium along said cooling fins to first contact the portion thereof adjacent the capillary tube and thereafter the portion thereof adjacent the condenser tubing, a portion of said capillary tube and a portion of said suction tube being in heat exchange relationship.

2,300,229. FREEZER FOR PEAS AND OTHER PRODUCE. Frank W. Knowles, Seattle, Wash. Application Aug. 17, 1938, Serial No. 225,429. 7 Claims. (Cl. 62—102).



3. A produce freezing apparatus of the class described, comprising: an insulated container, a compartment communicating with the upper end of the container, a feeder tray extending through said compartment, said container having an inlet opening communicating with said compartment, said feeder tray extending through the opening for delivering produce into said container, means for creating a current of cooled air and for removing sensible heat from the produce while said produce passes through the compartment and over the feeder tray, agitating and conveying means located within the container for passing the produce progressively from a higher to a lower temperature region in its path through the container, means for admitting a blast of low temperature air into the lower end of the container, and means for removing the air from the upper end of the container.

2,300,345. REFRIGERATING CABINET. Leonard P. Clerc, Chicago, Ill. Application Jan. 25, 1939, Serial No. 252,707. 7 Claims. (Cl. 312—134).



1. In a refrigerating cabinet, the combination of a food compartment, a conveyor system within said cabinet, said conveyor system comprising a plurality of carriers, a plurality of doors in said cabinet for gaining access to said compartment, motor operated means for advancing said carriers in a circuitous path behind said doors, and means operated by any one of said doors upon opening thereof to stop the travel of said carriers.

134,160. DESIGN FOR A REFRIGERATOR. Howard B. Barber, Glenview, Ill., assignor to Montgomery Ward & Co., Inc., Chicago, Ill., a corporation of Illinois. Application Oct. 22, 1941, Serial No. 103,862. Term of patent 7 years.

The ornamental design for a refrigerator, substantially as shown and described.

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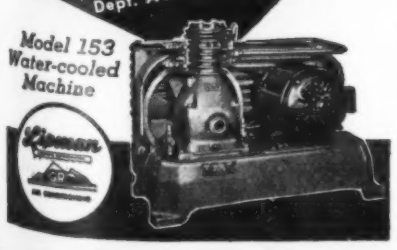
Model 153 Water-cooled Machine



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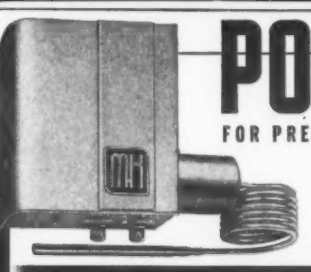

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"I don't know what a Marine just returned from the Solomons is supposed to talk about on this the one-hundred-and-sixty-seventh anniversary of the Corps. But I *do* know what *this* Marine has been itching to say and to talk about. It may be hard for you to realize it . . . sitting there in the quiet and peace of your home . . . but all Hell's broken loose all over the world. I know, because I've just come back from it.

"And it isn't any pretty picture I want to trace for you, but a nasty, dirty, bloody picture.

"And don't think for a minute . . . just because America's homes are thousands of miles away from actual combat . . . that they're not a part of this picture.

"You know, throughout the generations artists have tried to draw a picture of Hell. Well, Tulagi would have given them a rough idea . . . a very rough idea . . . of what Hell is like. It's a crazy, seething inferno of the flames of bombed ammunition dumps and it's the black, choking smoke of shelled gasoline tanks . . . it's more noise than you ever thought there could be on earth . . . with paths of tracer bullets to etch the picture of Hell right into your mind. That was Tulagi!

"Y'know, it's pretty funny to me to hear anyone worrying about getting only one cup of coffee a day . . . with a picture of wounds, right down to the muscle and bone, still staring me in the face.

"There was Major Ken Bailey. He was shot clean through the leg at Tulagi. And I mean *through* . . . although it wasn't so very clean and he was sent back for repairs and then ordered home.

"But Ken wasn't through. He knew that those Japs meant business and that they didn't like us English-speaking folks even a little bit. So he . . . as much as any good Marine could do . . . told his commanding officer he was going back in the fight instead of coming home.

"'Okay,' said the skipper. 'If that's the way you feel about it . . . go on back.' And that *was* the way Ken felt and he went back in again. And he was wounded again. This time it was a wound in the skull. And he went back. And then . . . wounded a third time . . . he *died*.

"Guys like Ken Bailey don't ride back into battle, through Jap-infested jungles, on a ration of gasoline.

"They go back on their own two legs . . . or their one-and-a-half legs. Ken Bailey isn't an exception. He's typical. There are thousands like him.

"They've seen and felt war . . . yes . . . and tasted it . . . until it spewed right out of their lips . . . and they died.

"They know the Japanese are tough, shrewd, game, tricky, fierce fighters who want to wipe out America . . . and they fully expect to do it, too.

"And . . . unless every one of us knuckles down and pulls in his belt . . . they will!

There can't be quibbling about *making* a rifle here in America any more tha there can be any quibbling about *using* one out there in the Pacific.

"You've got to aim straight and sure right here in every town and village an city in America . . . just as sure as every Marine expert rifleman has to aim and fi when he sees a horde of green-uniformed Japs coming toward him in a swelterin disease-ridden jungle.

"It means that everyone has to live strict, straight, efficient and scrimping liv *beginning* right *now* in America . . . or you won't have any lives to live ever agai No . . . and we won't have *America* either. Maybe some of you know all the things. If you do, tell your neighbors about them . . . and keep on telling them . tell them till they get mad at you. Maybe, after a while, they'll get mad at tho Japs and all the rest of that rat-infested gang that want to eat away the civilizatio we've built up for ourselves and our children. And if you young fellows listenin at home like that home of yours and are made of the right stuff . . . don't think t United States Marine Corps doesn't need you! 'Cause it does.

"This is the greatest, toughest war America has ever been up against an everybody has to snap out of it right now and forget about the old peace-tim ways of living and thinking. The longer it takes every American to do *that* t longer this war is going to last . . . and the closer we're going to come to losi it. Ken Bailey wouldn't like that . . . one little bit! And my old skipper, Colon Merritt Edson and the men who are listening somewhere out there in the Pacif I know they're agreeing with every word I've said.

"Good hunting, gang . . . and good luck!"

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